VSB — TECHNICAL UNIVERSITY OF OSTRAVA
FACULTY OF ECONOMICS

DEPARTMENT OF FINANCE

Komparace finanční výkonnosti podniků v automobilovém průmyslu ve vybraných zemích
Comparison of Financial Performance of Companies in the Automotive Industry in Selected Countries

Student: Mingxuan Ding
Supervisor of the bachelor thesis: Ing. Petr Gurny, Ph.D

Ostrava 2020

VŠB - Technical University of Ostrava
Faculty of Economics
Department of Finance

Bachelor Thesis Assignment

Student: **Mingxuan Ding**

Study Programme: B6202 Economic Policy and Administration

Study Branch: 6202R010 Finance

Title: Comparison of Financial Performance of Companies in the Automotive Industry in Selected Countries
Komparace finanční výkonnosti podniků v automobilovém průmyslu ve vybraných zemích

The thesis language: English

Description:

1. Introduction
2. Description of the Financial Analysis Methodology
3. Basic Financial Characteristic of Chosen Companies
4. Analysis and Comparison of Performance of Chosen Companies
5. Conclusion

Bibliography
List of Abbreviations
Declaration of Utilisation of Results from the Bachelor Thesis
List of Annexes
Annexes

References:

DAMODARAN, Aswath. *Applied Corporate Finance*. 3rd ed. New York: Wiley, 2010. ISBN 978-0470384640.
DLUHOŠOVÁ, Dana et al. *Financial Management and Decision-making of a Company. Analysis, Investing, Valuation, Sensitivity, Risk, Flexibility*. SAEI, vol. 28. Ostrava: VŠB-TU Ostrava, 2014. ISBN 978-80-248-3619-5.
PETERSON DRAKE, Pamela and Frank, J. FABOZZI. *Analysis of Financial Statements*. New York: Wiley, 2012. ISBN 978-1118299982.

Extent and terms of a thesis are specified in directions for its elaboration that are opened to the public on the web sites of the faculty.

Supervisor: **Ing. Petr Gurný, Ph.D.**

Date of issue: 22.11.2019

Date of submission: 07.05.2020

Ing. Iveta Ratmanová, Ph.D.
Head of Department

doc. Ing. Lenka Kauerová, CSc.
Vice Dean for Study Affairs
delegated to the negotiation r.no.
VSB/19/050319/9900 from 24.9.2019

I hereby declare that I have elaborated the entire thesis including annexes myself.
[I have supplemented the provided annexes No. ... myself.]

Ostrava dated May 1, 2020 ..... MINGXUAN DING .....

Student´s name and surname

Contents

Contents 3

1 Introduction 5

2 Description of the Financial Analysis Methodology 6

2.1 Financial analysis of a company 6

2.2 Financial statement of a company 8

2.2.1 Balance sheet 8

2.2.2 Income statement 10

2.2.3 Cash flow 10

2.3 Common-size Analysis 11

2.3.1 Vertical Common-size Analysis 11

2.3.2 Horizontal Common-size Analysis 13

2.4 Financial Ratio Analysis 13

2.4.1 Profitability ratios 13

2.4.2 Liquidity ratios 15

2.4.3 Solvency ratios 17

2.4.4 Activity ratios 18

2.5 Pyramidal decomposition 20

3 Basic Financial Characteristic of Chosen Companies 22

3.1 Geely Tata and Skoda'profiles 22

3.2 Common-size analysis of Geely Tata and Skoda 25

3.2.1 Vertical Common-size Analysis 26

3.2.2 Horizontal Common-size Analysis 29

4 Analysis and Comparison of Performance of Chosen Companies 33

4.1 Financial ratios analysis 33

4.1.1 Profitability ratios 33

4.1.2 Liquidity ratios 37

4.1.3 Solvency ratios 40

4.1.4 Activity ratios 44

4.2 Pyramidal decompositions 47

5 Conclusion 54

Bibliography 56

BOOK 56

Electronic references 56

List of Abbreviations 58

Declaration of Utilisation of Results from the Bachelor Thesis 59

List of Annexes 1

Annexes 1

Annex1 Balance sheet of Geely Tata and Skoda from 2014-2018 1

Annex 2 Cash flow of Geely Tata and Skoda from 2014-2018 1

Annex 3 Financial ratios of Geely Tata and Skoda from 2014-2018 1

1 Introduction

This thesis is devoted to the financial analysis of research in chosen companies (Geely, Tata, Skoda), They are excellent companies in the automotive industry. The objective of the thesis is to assess chosen companies' performance, potential and comparison by using financial data and ratios from 2014 to 2018.

We will introduce the definitions and formulas of these analysis methods, such as common scale analysis, financial ratio analysis and pyramid decomposition. In Chapter 3, we describe the characteristics of the selected company, such as history, major products and achievements of these developments, as well as strategies and innovations to adapt to the problems faced by the selected company. Chapter 4 will be an extension of Chapter 2 and Chapter 3. Based on the alternative methods in Chapter 2, we can analyze profitability, asset utilization, liquidity and debt utilization, and discover the relationship between company performance and related events or strategies.

2 Description of the Financial Analysis Methodology

In this chapter, we will introduce financial analysis methods, which will be used in subsequent chapters. We will divide this chapter into three parts. First, we will introduce profitability, solvency, mobility and liquidity. In the following chapters, we will explain the balance sheet, income statement and cash flow. Third, introduce common-dimensional analysis, including vertical common-dimensional analysis and horizontal common-dimensional analysis. In the fourth part, we will introduce the financial ratio analysis, and the last part is the DuPont analysis.

2.1 Financial analysis of a company

In financial analysis, we use the data in the financial statements or other documents to calculate a large number of financial indicators to evaluate the company's solvency, profitability, operating capacity and cash flow, identify possible problems, and according to the operation and management situation Make informed decisions for analysis. Financial statements are derived from the simplification, compression and summary of transactions. Therefore, no one financial statement provides sufficient information by itself and no one item or part of each statement can summarize the information[1]. So, we have to analysis detail of each financial statement.

[1] See [4]

Profitability

Profit is an absolute number, it depends on income or income, not the cost or expense incurred by the company. It is calculated by subtracting total expenses from total revenue and displayed in the company's income statement. Regardless of the company's business size, business scope, or industry, the company's goal is always to make money.

Solvency

Solvency refers to the company's ability to repay long-term debts and financial obligations. Solvency is critical to maintaining a business because it demonstrates the ability of a company to continue to operate in the foreseeable future.

Activity

It means the company’s turnover and check whether the company can run safely.

Liquidity

Liquidity means how fast a company’s property transfers to the cash or money, its important to the company.

2.2 Financial statement of a company

Corporate finance must be viewed as an integrated whole[2], it usually included their three parts of financial statements. Financial statements[3] (or financial reports) are formal records of the financial activities and position of a business, person, or other entity. A balance sheet is a balance sheet or financial statement that reports the company ’s assets, liabilities, and owner ’s equity at a given point in time. Income statement-or income statement (income statement) or consolidated income statement or income statement-reports the company's income, expenses, and profits for a specific period. The income statement provides information about the business of the enterprise. This includes sales and expenses incurred during the specified period. The statement of changes in equity or the statement of changes in equity or the retained earnings statement is used to report the company's changes in equity within a specified period. The cash flow statement reports the company's cash flow activities over a period of time, especially its operating, investment and financing activities. Financial statements are actually reports for unknown but specific user groups. If users do not analyze and explain their decisions from their own perspective, such reports lose their importance. The financial statements provide facts, but certain facts do not convey the same meaning to everyone. User needs and environments vary. Therefore, statements describing facts need to be analyzed and explained according to the needs of specific users. Anyway, financial statements and FSA are two parts of a continuous process[4].

2.2.1 Balance sheet

A balance sheet is a financial statement that reports company assets, liabilities, and shareholders ’equity within a specified period and provides a basis for calculating the rate of return and evaluating the capital structure. It is a financial statement that provides a snapshot

[2] See [6]
[3] See [5]
[4] See [8]

of the assets owned and owed by the company and the amount invested by shareholders. It is used for basic analysis or calculation of financial ratios together with other important financial statements (such as income statement and cash flow statement). That's the basic formula:

$$\text{Assets} = \text{Liabilities} + \text{Shareholders}' \text{equity} \quad (2.1)$$

To describe these three parts in details is as follows:

Assets

Assets are mainly composed of current assets and non-current assets. Liquid assets, like cash, are short-lived assets with strong liquidity, which can be in the form of cash or relatively converted into cash. The main categories are accounts receivable, inventory, cash and cash equivalents. Non-current assets include trademarks, goodwill, equipment, buildings and other long-term assets with long service life and low liquidity.

Liabilities and shareholders' equity

Shareholders 'equity, also known as shareholder 's equity and shareholder 's equity, refers to the company's owner 's remaining claim after the debt is paid off. Equity is equal to the company's total assets minus total liabilities. Stocks can be found on the company's balance sheet; this is one of the most common financial indicators used by analysts to assess the company's financial condition. Shareholders' equity can also represent the company's net worth or book value.

2.2.2 Income statement

The income statement is one of the three important financial statements that reflect the company's financial situation during a specific accounting period. The basic equation underlying the profit/loss statement is:

$$\text{Net income} = \text{Revenues} - \text{Costs} \tag{2.2}$$

2.2.3 Cash flow

Cash flow is divided into three parts: cash flow from operating activities, cash flow from investment activities and cash flow from financing activities. The basic formula is as follows:

$$\text{Net cash flow} = \text{Sum of inflows} - \text{outflow} \tag{2.3}$$

$$\text{Cash at the end} = \text{cash at the beginning} + (-) \text{ net cash flow} \tag{2.4}$$

2.3 Common-size Analysis

A common analysis is a method of evaluating financial information. It represents each item in the financial statements as a percentage of the base amount in the same period. If the income statement is used, the basic amount is net sales.

.

2.3.1 Vertical Common-size Analysis

Vertical analysis is a method of financial statement analysis in which each line item is listed as a percentage of a base figure within the statement. vertical common-seize analysis analyzes the changes in the proportions of selected benchmarks. Such as total revenues, total assets, total liability and so on. In details[5]

For the income statement, the benchmark is income. In each period, income equals 100%, and each item in the income statement is recalculated as a percentage of income.

The basis of the balance sheet is total assets. For a given point in time, the total assets are equal. Each item on the balance sheet is reclassified as a percentage of total assets. The basic formula is:

[5] See [3]

$$\text{portion} = \frac{xi}{\sum xj} \tag{2.5}$$

Where x_i is one part of x_j, x_j is selected benchmark like total assets equals the sum of each component.

2.3.2 Horizontal Common-size Analysis

In financial statement analysis, Level of commonality analysis. It is based on assessing the changes in financial statement data over a period of time or the financial statement data over a given period of time. Horizontal analysis can use absolute comparison or percentage comparison. This is also called the base year analysis. The basic formulas are as follows:

$$\text{Absolute change } \Delta x = x_t - x_{t-1} \tag{2.6}$$

$$\text{Relative change} = \frac{\Delta x}{x_{t-1}} \tag{2.7}$$

2.4 Financial Ratio Analysis

Financial ratios are mathematical comparisons of financial statement subjects or categories. These relationships between financial statements help investors, creditors, and internal managers understand the state of the business and areas for improvement. Ratio analysis is a quantitative method.

2.4.1 Profitability ratios

The profitability ratio is a financial measure used to assess a company's ability to generate long-term data on its revenues, operating costs, balance sheet assets and shareholders' equity using data at a particular point in time..

Gross profit margin

Gross profit margin is the gross margin divided by revenue. The formula is as follows:

$$\text{Gross profit margin } = \frac{gross\ margin}{revenue} \tag{2.8}$$

Net profit margin

Net profit margin is the ratio of a company's net profit to revenue. Net profit margin is usually expressed as a percentage, but it can also be expressed in decimal. Net profit margin represents how much profit a company can convert into every dollar of income We can calculate the gross profit margin like:

$$\text{Net profit margin } = \frac{net\ profit}{total\ revenue} \tag{2.9}$$

Operating profit margin

Operating margin is an indicator of a company's operating conditions. It measures operating profit per unit of income.

The formula is as follows:

$$\text{Operating profit margin} = \frac{operating\ income}{total\ revenue} \quad (2.10)$$

Return on assets

Return on Asset (ROA) and Return on Equity (ROE). They measure the percentage of profits we derived from every unit of company's asset and equity. We can calculate it like:

$$\text{Return on assets} = \frac{net\ income}{total\ assets} \quad (2.11)$$

Return on equity

Return on equity (ROE) is a measure of financial performance that divides net income by shareholders' equity. Since shareholders' equity is equal to a company's assets minus its debts, the return on equity is considered a return on equity. We can calculate it like:

$$\text{Return on equity} = \frac{net\ income}{total\ shareholder's\ equity} \quad (2.12)$$

2.4.2 Liquidity ratios

Liquidity ratio measures a company's ability to meet its direct or short-term debt and obligations. They compared the company's current assets with their short-term liabilities and debt.

Current ratio

Current Ratio measures amount of current assets for every unit in current ability. We can calculate it like:

$$\text{Current ratio} = \frac{current\ assets}{current\ liabilities} \quad (2.13)$$

Quick ratio

Quick ratio represents a company's ability to repay current debt without selling inventory or obtaining additional financing. Inventory must be adjusted from current assets because it is usually less liquid and must be sold before receiving cash, We can calculate it like

$$\text{Current ratio} = \frac{current\ assets - inventory}{current\ liabilities} \quad (2.14)$$

Cash ratio

Cash ratio is a measure of a company's liquidity, especially the ratio of total cash and cash equivalents to current liabilities. The formula is as follows:

$$\text{Cash ratio} = \frac{cash\ and\ cash\ euivalent + short - term\ investment}{current\ liabilities} \quad (2.15)$$

2.4.3 Solvency ratios

Solvency ratio measures a company's ability to meet long-term debt. Sometimes called financial leverage.

Debt-to-assets ratio

Debt-to-equity ratio is calculated as a percentage of the assets provided by the company, companies with high debt-to-asset ratios are called "high leverage" instead of high leverage

The above liquid. The formula is as follows:

$$\text{Debt} - \text{to} - \text{assets} = \frac{TL}{TA} \tag{2.16}$$

Where the TL is total liabilities, TA is total assets.

Debt-to-equity ratio

Debt-to-equity ratio, like debt ratio, refers to the amount of corporate debt relative to its share capital. If the ratio is greater than 1, it means that the company uses more liabilities than equity in asset financing. We can calculate it like:

$$\text{Debt} - \text{to} - \text{equity} = \frac{total\ debt}{total\ shareholder's\ equity} \tag{2.17}$$

Financial leverage

Financial leverage is the ratio of total assets divided by total shareholder equity. Can it be described as the extent to which companies or investors use borrowed funds. The formula is as follows:

$$\text{Financial leverage} = \frac{total\ assets}{total\ shareholder's\ equity} \tag{2.18}$$

2.4.4 Activity ratios

The activity ratio is a financial indicator that shows how effectively the company uses assets on the balance sheet to generate revenue and cash. The activity ratio, often referred to as the efficiency ratio, helps analysts assess how the company handles inventory management, which is critical to the company's business liquidity and overall financial situation.

Receivables turnovers

Accounts receivable turnover ratio is a measure of the amount of accounts receivable "transferred in" within one year. The formula is as follows:

$$\text{Receivables turnovers} = \frac{TR}{receivables} \tag{2.19}$$

Where the TR is total revenue.

Inventory turnover

Inventory turnover rate and total asset turnover rate, in which inventory turnover rate measures the number of sales or use of memory goods in a year. Total asset turnover is an indicator that can help investors understand how a company can effectively use its assets to achieve sales We can calculate the ratio like:

$$\text{Inventory turnovers} = \frac{sales}{inventory} \tag{2.20}$$

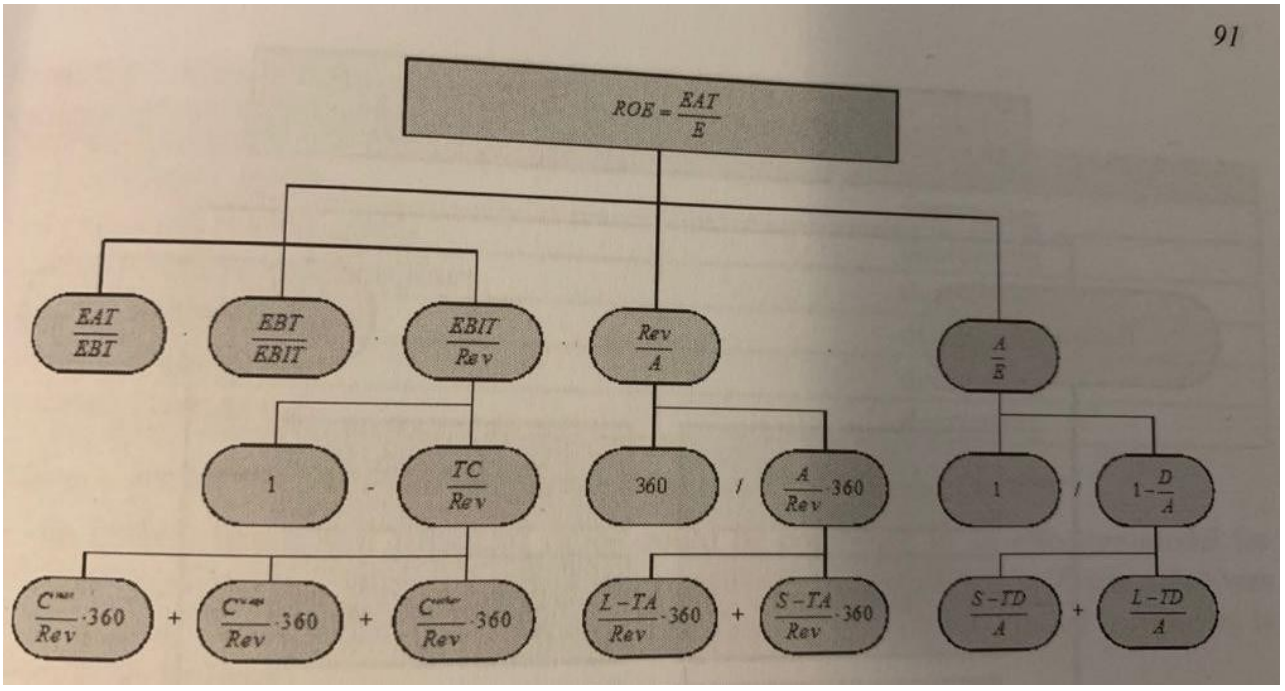
Total assets turnover

Asset turnover rate shows the average speed at which a company converts assets into cash. Calculate by dividing sales by the average total assets. The formula is as follows:

$$\text{Total assets turnover} = \frac{total\ revenue}{average\ total\ assets} \tag{2.21}$$

2.5 Pyramidal decomposition

Chart 2.1 Decomposition of ROE[67]



In this part, we will focus on incremental analysis based on the pyramid index system. Most pyramid decomposition is based on DuPont analysis. This method establishes a hierarchy of selected financial and economic indicators and applies them to the pyramid system. For example, let 's analyze the return on equity.

$$\mathrm{ROE} = \frac{EAT}{S} \cdot \frac{S}{A} \cdot \frac{A}{E} \tag{2.22}$$

Furthermore, we can decompose these indicators by cost efficiency and turnover indicators:

$$\frac{\mathrm{EAT}}{S} = \frac{EAT}{EBT} \cdot \frac{EBT}{EBIT} \cdot \frac{EBIT}{S} \tag{2.23}$$

$$\frac{\mathrm{S}}{A} = \frac{360}{\frac{A}{S} \cdot 360} = \frac{360}{\frac{FA}{S} \cdot 360 + \frac{CA}{S} \cdot 360} \tag{2.24}$$

According to formula (2.17) and (2.18), we may get a more subdivided, decomposition of

[6] See [1]
[7] See [7]

ROE.

$$\mathrm{ROE} = \frac{\mathrm{EAT}}{EBT} \cdot \frac{EBT}{EBIT} \cdot \frac{EBIT}{S} \cdot \frac{360}{\frac{FA}{S} \cdot 360 + \frac{CA}{S} \cdot 360} \cdot \frac{A}{E} \tag{2.25}$$

Among them, ROE is the return on equity, EAT is net profit (after-tax income), S is sales (income), EBT is pre-tax income, EBIT is pre-interest income, FA is fixed assets, and CA is current assets.

The total increment of ROE can be explained by particular influences according to (2.19) as:

$$\Delta y_{ROE} = \Delta x_{EAT/S} + \Delta x_{S/A} + \Delta x_{A/E} \tag{2.26}$$

The gradual change method

The decomposition for ROE of three particular indicators is as follows:

$$\Delta y_x = \Delta x_{a1} + \Delta x_{a2} + \Delta x_{a3} \tag{2.27}$$

Influences are quantified without a residue due to (2.22) as follows[8]

$$\Delta x_{ai} = \Delta x_{ai} \cdot \prod_{j<i} a_{j,1} \cdot \prod_{j>i} a_{j,1} \cdot \frac{\Delta y_x}{\Delta x} \tag{2.28}$$

Symbols:
x – basic ratio

Δx – absolute change in the basic ratio

a – component ratio

Δa – absolute change in the component ratio

Δx_{a1}– absolute change in the basic ratio caused by the change in the first (a_1) component ratio

[8] See [2]

3 Basic Financial Characteristic of Chosen Companies

Chosen companies have many common characterizations, they both belongs to Mid-level car manufacturing company. Geely listed in HKex, Tata listed in NSE, Skoda listed in PSE.

3.1 Geely Tata and Skoda'profiles

In this section, we will discuss the history of Geely, Tata and Skoda, their products and major achievements.

3.1.1 History of Geely Tata and Skoda

Geely[9]

Zhejiang Geely Holding Group Co., Ltd., referred to as Geely, is a global Chinese private automobile company headquartered in Hangzhou, Zhejiang Province. The group was established in 1986 and entered the automotive industry under the Geely brand in 1997. It mainly sells passenger cars of Geely, Lotus, Lincoln, Proton, Volvo and other brands, as well as commercial vehicles of London Electric Vehicle Company. He Yuancheng is an automobile brand. The group sold 1.5 million cars in 2018. Since acquiring Swedish passenger car manufacturer Volvo from Ford in 2010, Geely has been manufacturing its own cars. In 2013, the acquisition of London Electric Vehicle Company, a British electric taxi manufacturer, was completed.

[9] See [6]

Tata[10]

Tata Group is an Indian multinational group holding company headquartered in Mumbai, Maharashtra, India. Founded by jamsetji Tata in 1868, it gained international recognition after acquiring several multinational companies. Tata Group is one of the largest business groups in India. It is one of the largest industrial groups in the United States, established in 1868 and 152 years ago.

Skoda[11]

Skoda uto (commonly known as Skoda) is a Czech car manufacturer founded in 1895, formerly Laurin & Clement, headquartered in Mlada Breslav, Czech Republic. Glyceryl dilaurate. In 1925, Clement was acquired by shkodavos and became a state-owned enterprise in 1948. In 2018, the total global car sales reached 1.25 million units, a year-on-year increase of 4.4%. In 2017, the operating profit was 1.6 billion euros, a year-on-year increase of 34.6%. As of 2017, Skoda's profit margin is second only to Porsche among all Volkswagen Group brands. Shokoda was founded in 1895 in Mlada Poleslav, Czech Republic.

[10] See [7]
[11] See [8]

3.1.2 Products and main achievement

Volvo brand

Chinese automaker Geely is discussing a comprehensive merger with Volvo, which may mark the birth of China's first global auto manufacturing giant, which is an important milestone for the automotive industry.

Although Geely already owns this Swedish car manufacturer, Volvo and Geely are two independent companies. The full merger will create the first truly global Chinese automaker. It also saves production costs, parts procurement and R & D expenses.

Jaguar Land Rover brand

Since 2008, Land Rover has been part of Tata Motors, the UK ’s largest automaker, designing, manufacturing and selling some of the world ’s most famous premium cars. The two iconic brands of Jaguar Land Rover are Jaguar and Land Rover, including a series of luxury cars, sports cars and luxury SUVs, while Land Rover includes a series of high-end all-terrain vehicles.

The company's main automobile plants in the United Kingdom are in Solhull, Bromwich Castle, Haywood, Keaton, Wolverhampton Engine Manufacturing Center and Whitley Headquarters. The company also has production facilities in China through joint ventures in Nitra, Slovakia, OEM production in Austria, and local assembly operations in Brazil.

Skoda brand

This hatchback was launched as a rapid space launch at the 2013 Frankfurt Motor Show and has been under construction ever since. Since 2019, Skoda Scala has been successful in Western Europe and refurbished for the Russian market in 2020. This is because Sagitar is still the highest-selling Skoda in China and the 15th best-selling car in Russia.

3.2 Common-size analysis of Geely Tata and Skoda

Based on the 2014-2018 balance sheet, profit and loss statement and cash flow data, as well as the method in Chapter 2, we will conduct a general scale analysis of the selected company. The data will be shown in attachments 1, 2 and 3.

3.2.1 Vertical Common-size Analysis

In this section, we will obtain the percentage of each item in the total amount at a certain point in time and be more familiar with the structure of the financial statements.

Chart 3.1 Geely's vertical common size analysis of balance sheet (assets)

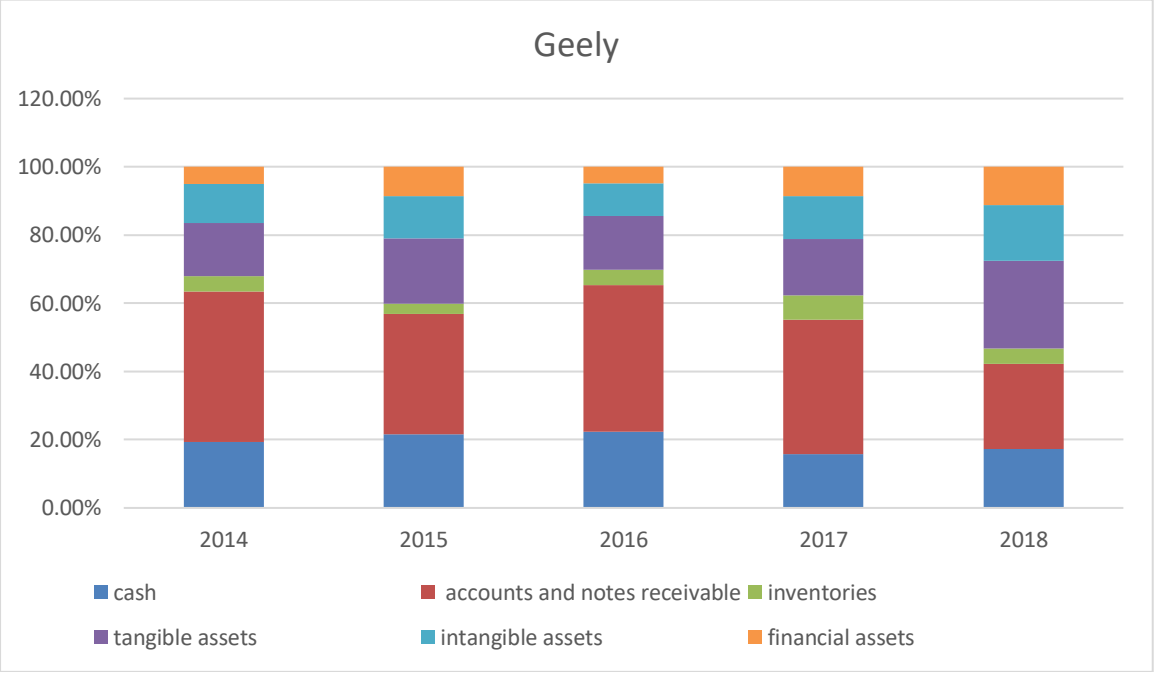


Chart 3.2 Tata's vertical common size analysis of balance sheet (assets)

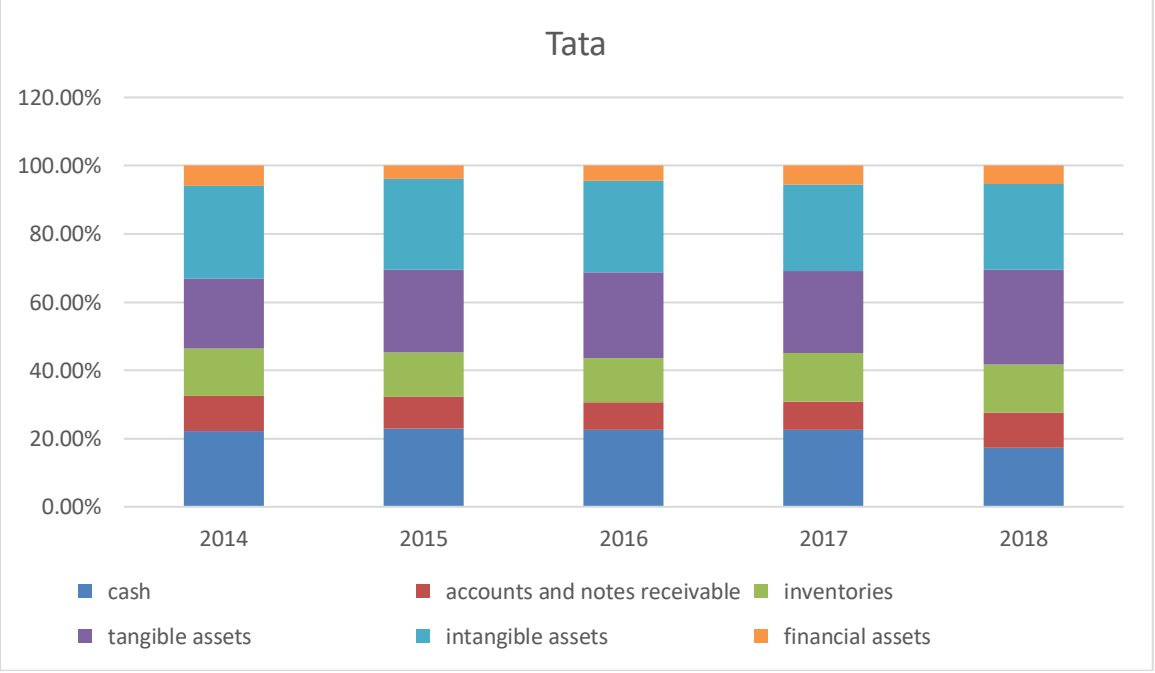
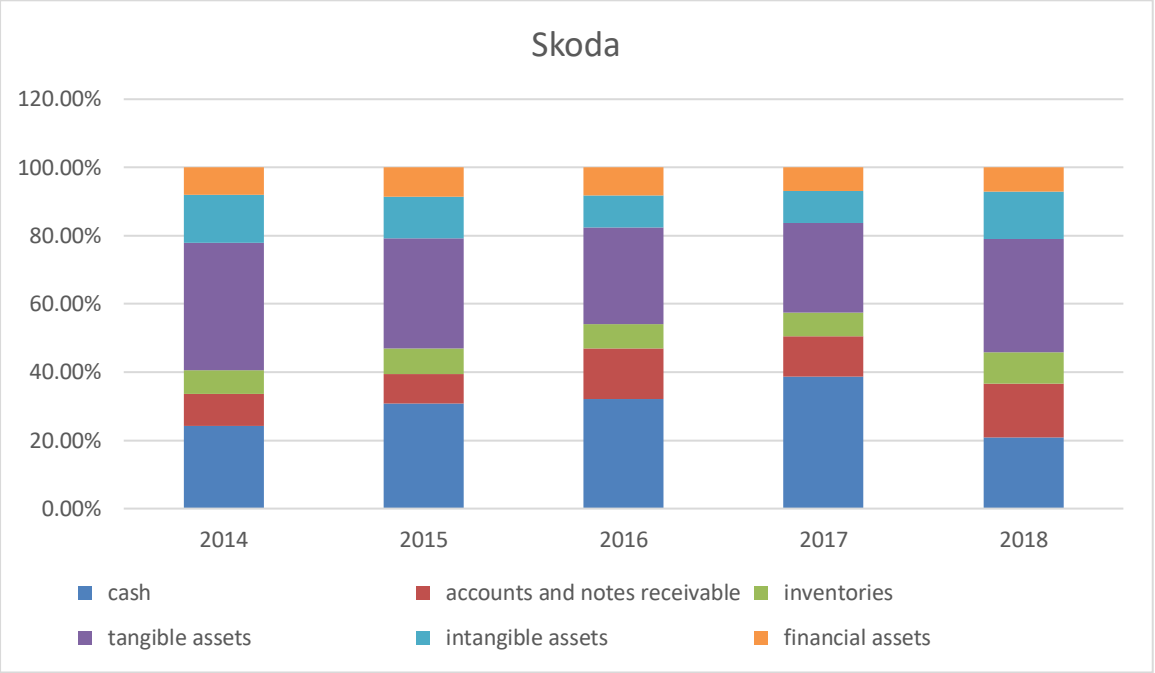


Chart 3.3 Skoda's vertical common size analysis of balance sheet (assets)



According to the vertical common size analysis of balance sheet (assets), we can see that Tata and Skoda's the cash is stable being a big part of assets, and Geely's the accounts and notes receivable is a big part of assets, that's different between chosen companies. The reason is that the Geely is a new company found recent year, so they spent much money to develop.

Chart 3.4 Geely's vertical common size analysis of balance sheet (liabilities and equity)

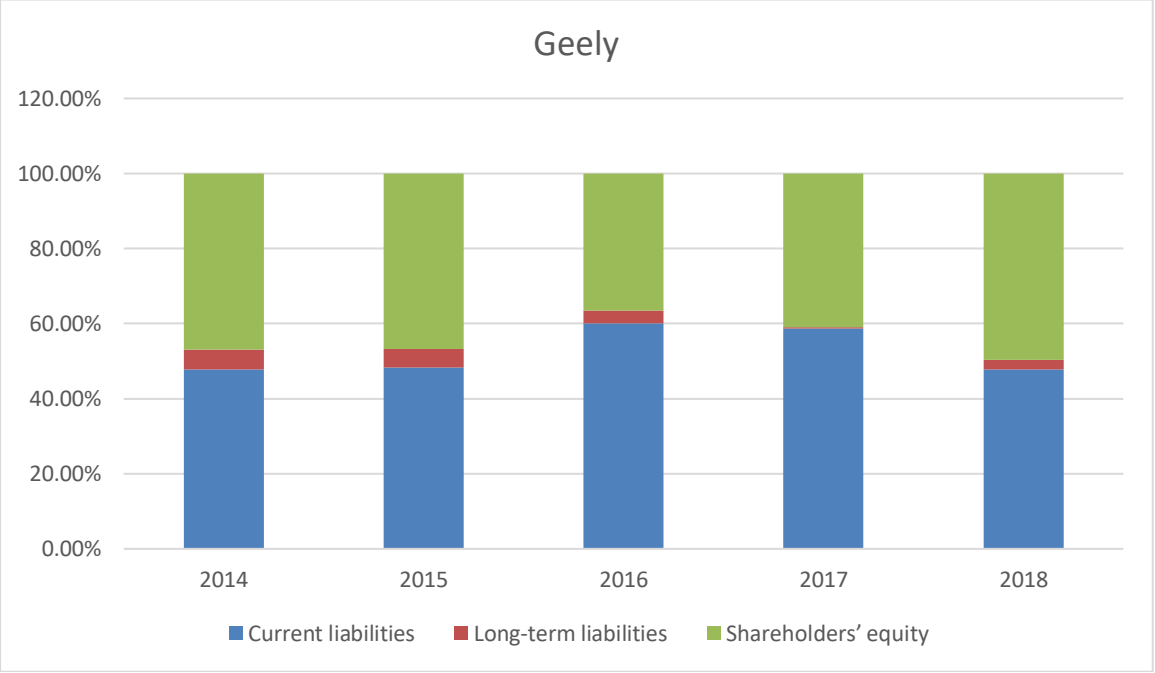


Chart 3.5 Tata's vertical common size analysis of balance sheet (liabilities and equity)

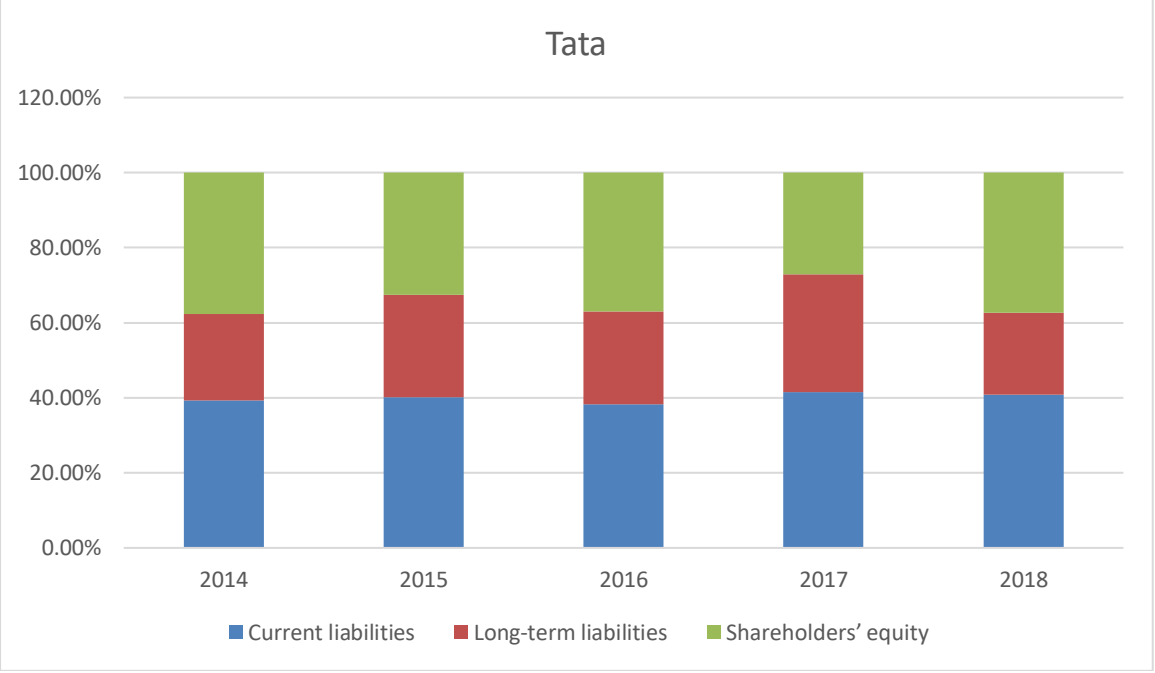
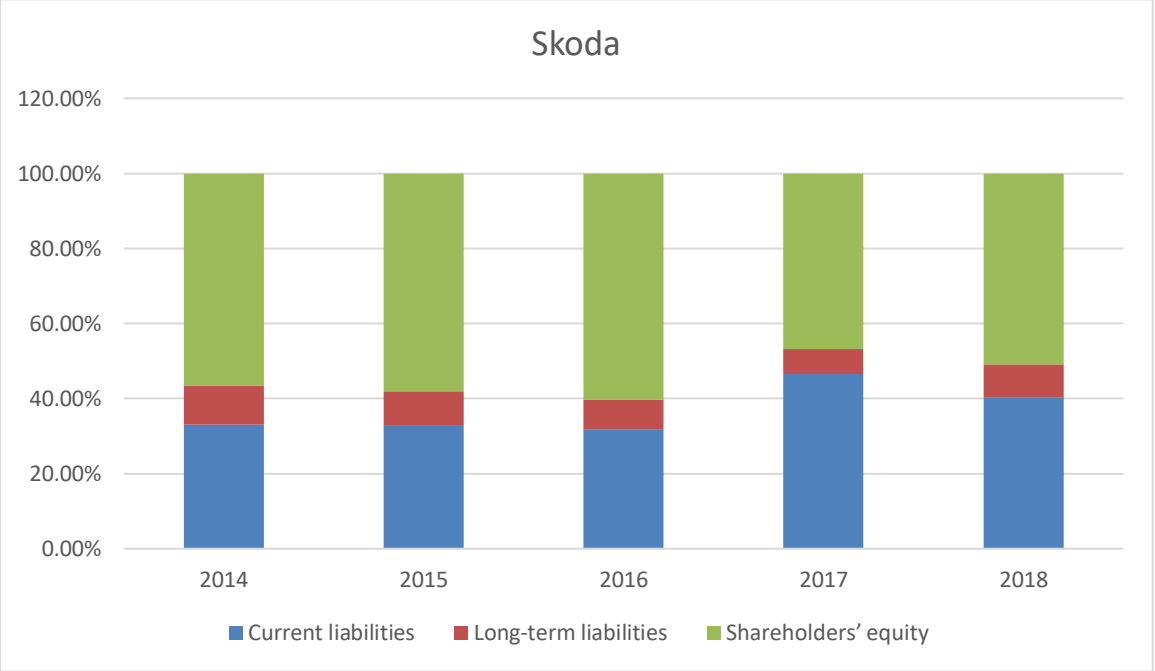


Chart 3.6 Skoda's vertical common size analysis of balance sheet (liabilities and equity)



As showed in the chart 3.4-3.6, The Skoda's shareholder's equity has the big part of liabilities and equity. But Tata is more balanced than others. Purchase many patents and related patents. Develop applications. When equity capital is reversed, accrued liabilities grow slowly.

3.2.2 Horizontal Common-size Analysis

Table 3.1 Geely's horizontal common size analysis of Balance sheet (assets)

Geely	2014	2015	2016	2017	2018
cash	100.00%	127.26%	208.87%	186.23%	218.48%
accounts and notes receivable	100.00%	90.68%	176.85%	203.74%	139.10%
inventories	100.00%	76.64%	188.60%	368.58%	252.62%
tangible assets	100.00%	137.09%	181.72%	239.78%	399.66%
intangible assets	100.00%	125.00%	153.55%	250.74%	356.28%
financial assets	100.00%	191.29%	168.84%	386.13%	537.69%

Table 3.2 Tata's horizontal common size analysis of Balance sheet (assets)

Tata	2014	2015	2016	2017	2018
cash	100.00%	123.24%	134.63%	158.63%	134.46%
accounts and notes receivable	100.00%	108.39%	102.07%	125.92%	172.32%
inventories	100.00%	111.13%	123.51%	159.34%	173.28%
tangible assets	100.00%	140.52%	162.53%	184.83%	232.95%
intangible assets	100.00%	116.79%	129.65%	145.45%	159.50%
financial assets	100.00%	77.75%	98.72%	142.89%	152.94%

Table 3.3 Skoda's horizontal common size analysis of Balance sheet (assets)

Skoda	2014	2015	2016	2017	2018
cash	100.00%	145.25%	170.85%	226.69%	106.92%
accounts and notes receivable	100.00%	106.29%	205.69%	177.71%	208.10%
inventories	100.00%	122.63%	130.56%	142.90%	163.97%
tangible assets	100.00%	99.58%	97.87%	100.22%	110.39%
intangible assets	100.00%	98.59%	85.36%	93.36%	121.54%
financial assets	100.00%	122.37%	134.09%	121.79%	110.39%

As can be seen from Tables 3.1-3.3, the value of other receivables, inventories, other current assets and intangible assets increased by more than half in 2012. On the other hand, cash, accounts receivable and long-term investment will eventually decrease. We know that intangible assets play an important role, such as purchasing patents and related applications.

Table 3.4 Geely's horizontal common size analysis of Balance sheet (liabilities and equity)

Geely	2014	2015	2016	2017	2018
Current liabilities	100.00%	114.59%	227.68%	279.64%	245.23%
Long-term liabilities	100.00%	106.85%	115.11%	13.61%	118.13%
Shareholders' equity	100.00%	113.01%	141.34%	199.30%	259.78%

Table 3.5 Tata's horizontal common size analysis of Balance sheet (liabilities and equity)

Tata	2014	2015	2016	2017	2018
Current liabilities	100.00%	121.57%	128.38%	164.72%	178.02%
Long-term liabilities	100.00%	141.07%	141.41%	213.45%	163.52%
Shareholders' equity	100.00%	103.00%	129.84%	112.23%	170.33%

Table 3.6 Skoda's horizontal common size analysis of Balance sheet (liabilities and equity)

Skoda	2014	2015	2016	2017	2018
Current liabilities	100.00%	113.22%	123.44%	199.49%	150.63%
Long-term liabilities	100.00%	102.90%	100.15%	91.01%	106.41%
Shareholders' equity	100.00%	117.48%	137.58%	117.48%	111.67%

In the horizontal common size analysis of liabilities and equity, accumulated other comprehensive long-term liabilities waves up and down. Current liabilities and shareholders' equity are all increasing from 2014 to 2018.

Chart 3.7 Geely's horizontal common size analysis of income statement

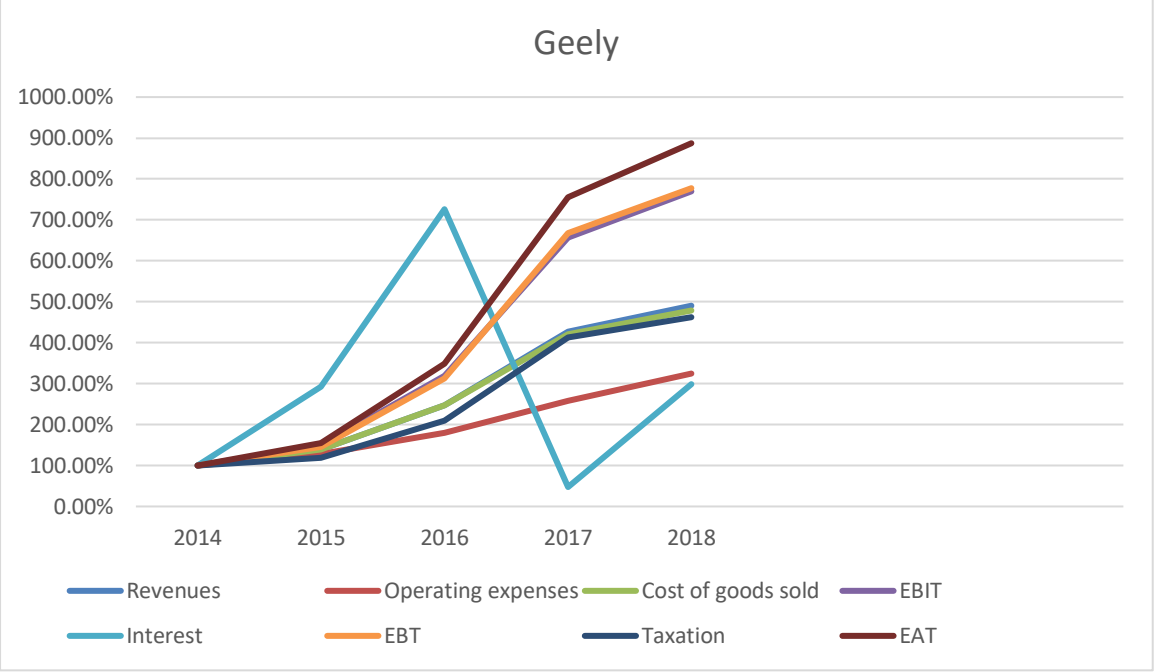


Chart 3.8 Tata's horizontal common size analysis of income statemen

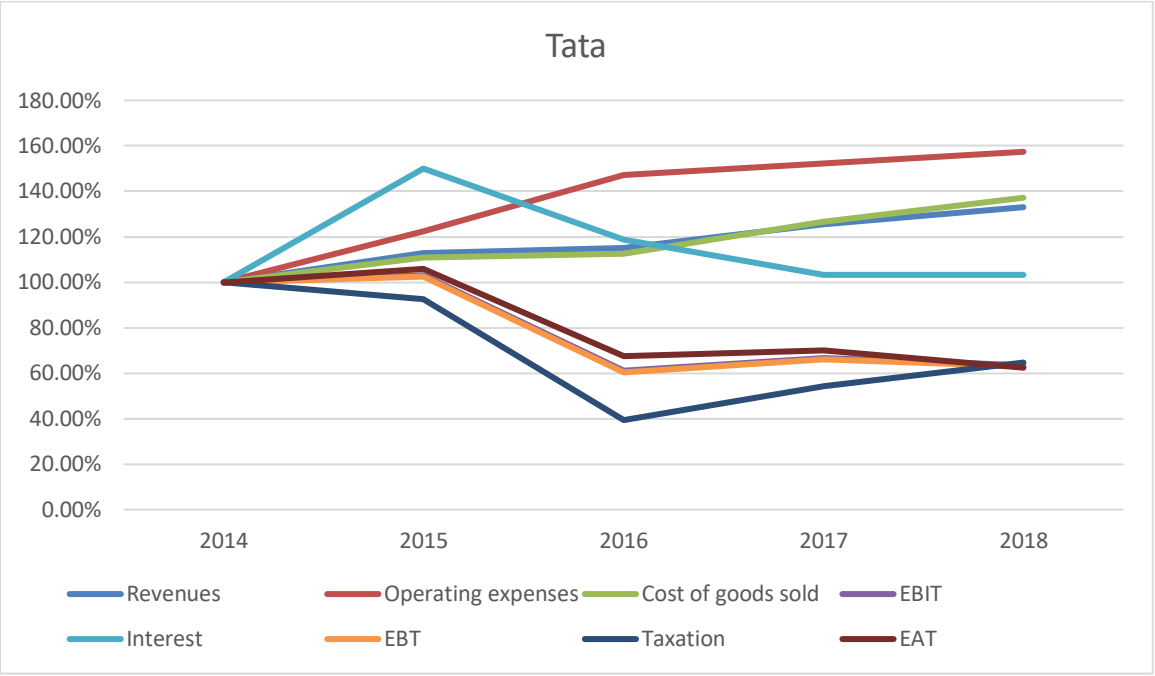
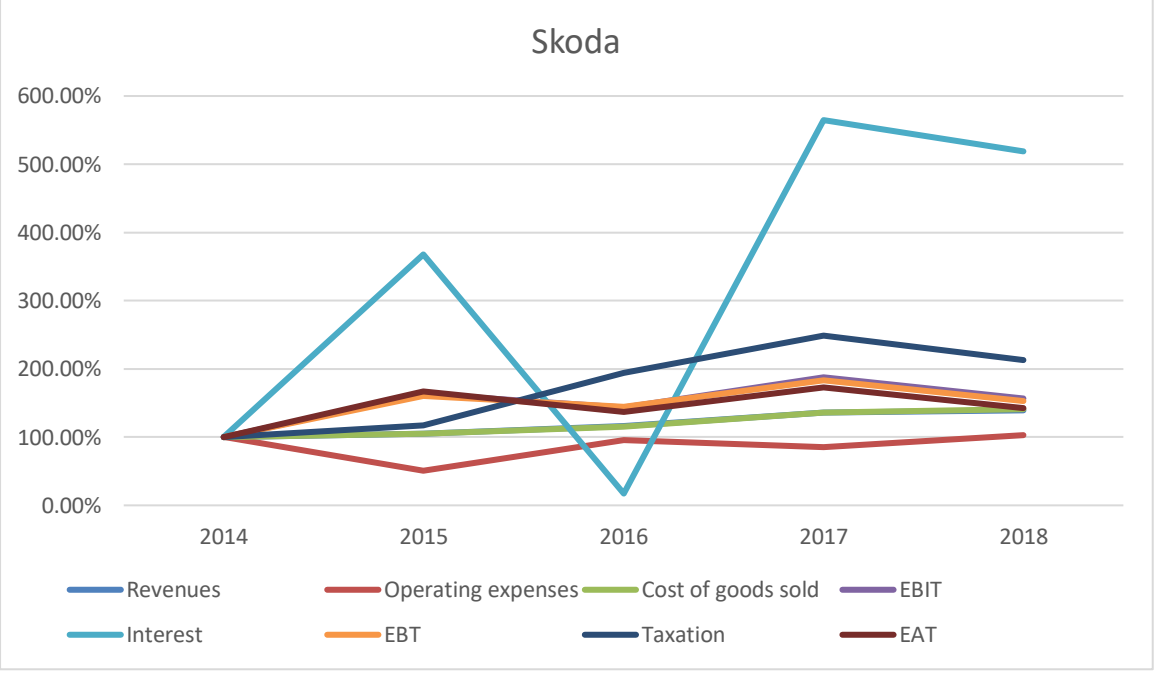


Chart 3.9 Skoda's horizontal common size analysis of income statemen



From table 3.7-3.9, we can find Geely' revenue increased four times rom 2014, that means Geely company is in high speed developing situation. Tata and Skoda' EAT are lower than years before, this means this two companies are in slow speed developing situation. So, investors will prefer to invest Geely more than other two companies.

4 Analysis and Comparison of Performance of Chosen Companies

Based on the data in Chapter 2 "2014-2018 Balance Sheet", "Income Statement" and "Cash Flow", and the method in Chapter 2, we will analyze the financial situation of the selected company in Chapter 2

4.1 Financial ratios analysis

As for this part of section, the financial ratios we mentioned in chapter 2 will be used to illustrate and resolve the operational factors and profitability of company. Such as profitability ratios, solvency ratios, liquidity ratios, activity ratios and so on.

4.1.1 Profitability ratios

Profitability ratios is a ratio measures the ability in managing, operating money and generate profits from activities. higher profitability ratios are commonly sought-after by most companies, as this usually means the business is performing well by generating revenues, profits, and cash flow.

Table 4.1 Geely's margins, return on assets and return on equity

Geely	2014	2015	2016	2017	2018
Operating income	2,529,636	7,831,844	9,091,461	13,752,433	16,546,043
Total revenues	21,738,358	30,138,256	53,721,576	92,760,718	106,595,133

Total assets	37,280,150	42,292,460	67,582,836	84,980,752	91,460,980
Total equity	17,466,350	19,739,523	24,686,249	34,810,834	45,374,718
operating profit margin	8.94%	9.54%	11.55%	13.77%	14.03%
net profit margin	6.52%	7.29%	9.21%	11.56%	11.80%
return on assets (ROA)	6.79%	18.52%	13.45%	16.18%	18.09%
return on equity (ROE)	8.12%	11.13%	20.03%	30.80%	27.73%

Table 4.2 Tata's margins, return on assets and return on equity

Tata	2014	2015	2016	2017	2018
Net income	1,879	2,038	1,312	1,272	1,133
Operating income	2,501	2,614	1,557	1,610	1,536
Total revenues	19,386	21,866	22,286	24,339	25,786
Total assets	15,589	18,563	20,567	24,350	26,780
Total equity	5,864	6,040	7,614	6,581	9,988
operating profit margin	12.74%	11.64%	6.77%	6.75%	6.08%
net profit margin	9.36%	8.79%	5.50%	5.23%	4.39%
return on assets (ROA)	16.04%	14.08%	7.57%	6.61%	5.74%
return on equity (ROE)	30.95%	31.82%	16.10%	19.33%	11.34%

Table 4.3 Skoda's margins, return on assets and return on equity

Skoda	2014	2015	2016	2017	2018
Net income	21,349	34,238	30,849	39,125	35,131
Operating income	21,598	35,154	30,892	40,531	40,531
Total revenues	299,318	314,897	347,987	407,400	416,695
Total assets	176,869	202,615	228,180	250,859	219,318
Total equity	100,001	117,482	137,580	117,484	111,674
operating profit margin	4.53%	-1.35%	2.77%	-1.64%	0.00%
net profit margin	6.15%	9.79%	7.23%	7.82%	6.31%
return on assets (ROA)	12.21%	17.35%	13.54%	16.16%	18.48%
return on equity (ROE)	18.42%	26.23%	18.29%	27.10%	23.56%

Chart 4.1 Geely's margins, return on assets and return on equity

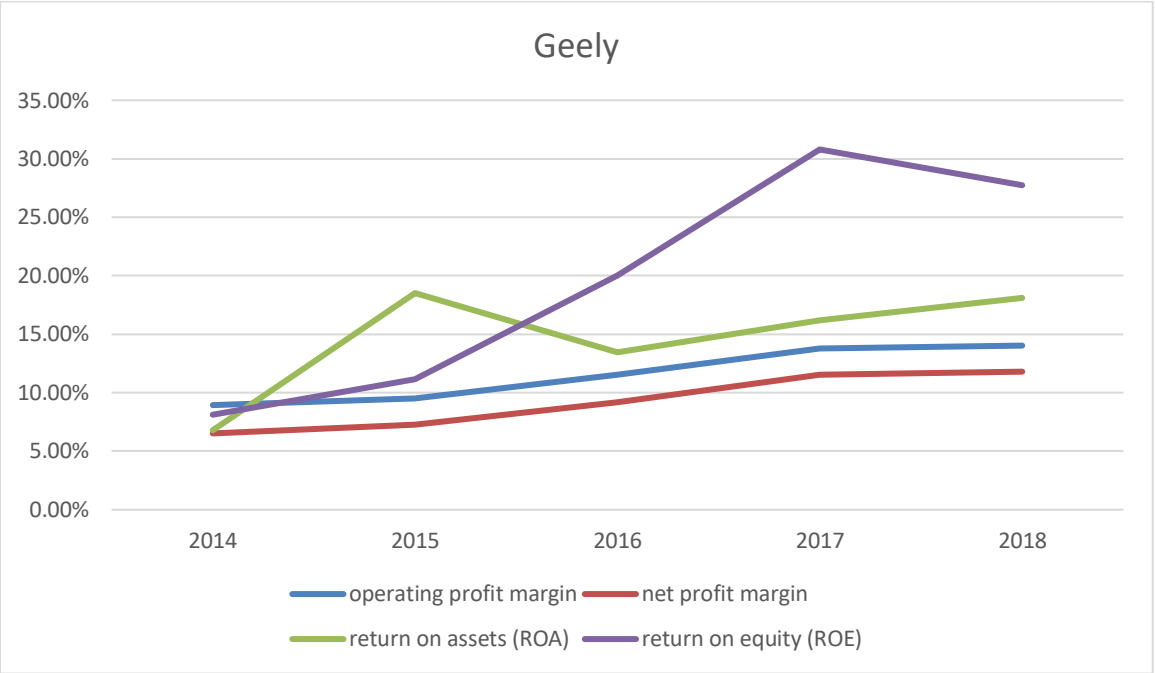


Chart 4.2 Tata's margins, return on assets and return on equity

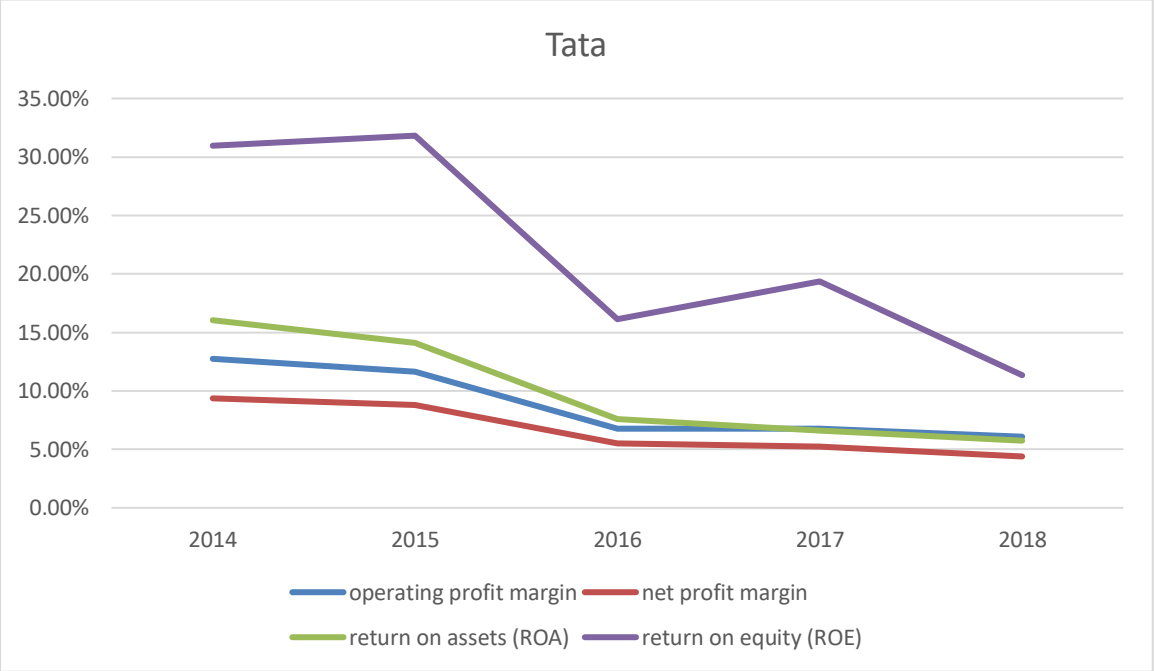
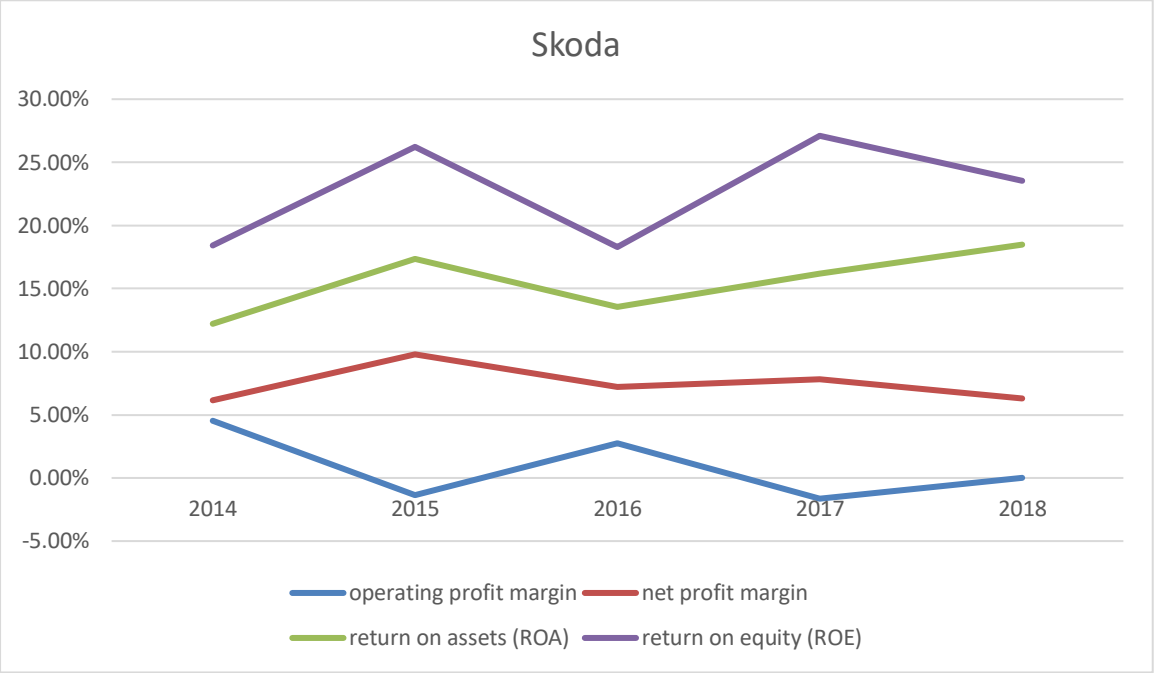


Chart 4.3 Skoda's margins, return on assets and return on equity



According to Table 4.1-4.3 and Figure 4.1-4.3. First, we found that these three profit margin trends experienced stable development from 2014 to 2016, then rose slightly in 2017, and then fell sharply in 2018. The return on net assets fell by 30.8%, which was 11.34 in 2014, accounting for 23.56%. Using the formula introduced in Chapter 2, we can find that the total shareholder's equity has been increasing since 2015, but after continuous growth since 2018, net profit has dropped significantly, resulting in a decline in the rate of return on net assets. Comparing to chosen companies, the data shows us that the profitability of Tata was much higher than that of Geely and Skoda since 2014 both amount and ratios. These three focused on autocar companies are all exceeded the average of industry. But after going through many manufacturers rush into the autocar market and imitate cars, Skoda and Tata Companies were losing their leading place and superiority in autocar markets.

4.1.2 Liquidity ratios

In this section, we use formula (2.13), (2.14) and (2.15) to calculate current ratio, quick ratio and cash ratio.

Table 4.4 Geely's current ratio, quick ratio and cash ratio

Geely'	2014	2015	2016	2017	2018
Current asset	25,303,099	25,347,852	47,249,001	53,008,183	42,785,480
Current liability	17,844,927	20,449,254	40,630,199	49,901,947	43,760,401
Inventory	1,648,263	1,263,170	3,108,682	6,075,122	4,163,918
Cash+marketable securities	7,203,176	9,166,926	15,045,493	13,414,638	15,737,196
Current ratio	1.42	1.24	1.16	1.06	0.98
Quick ratio	14.35	19.07	14.20	7.73	9.28
Cash ratio	0.40	0.45	0.37	0.27	0.36

Table 4.5 Tata's current ratio, quick ratio and cash ratio

Tata	2014	2015	2016	2017	2018
Current asset	7,230	8,410	8,972	10,962	11,170
Current liability	6,134	7,457	7,875	10,104	10,920
Inventory	2,174	2,416	2,685	3,464	3,767
Cash+marketable securities	3,459	4,263	4,657	5,487	4,651
Current ratio	1.18	1.13	1.14	1.08	1.02
Quick ratio	2.33	2.48	2.34	2.16	1.97
Cash ratio	0.56	0.57	0.59	0.54	0.43

Table 4.6 Skoda's current ratio, quick ratio and cash ratio

Skoda	2014	2015	2016	2017	2018
Current asset	71,730	94,961	123,342	144,184	100,447
Current liability	58,461	66,192	72,166	116,623	88,058
Inventory	12,326	15,115	16,093	17,614	20,211
Cash+marketable securities	42,878	62,280	73,256	97,201	45,846
Current ratio	1.23	1.43	1.71	1.24	1.14
Quick ratio	4.82	5.28	6.66	7.19	3.97
Cash ratio	0.73	0.94	1.02	0.83	0.52

Chart 4.4 Geely's current ratio, quick ratio and cash ratio

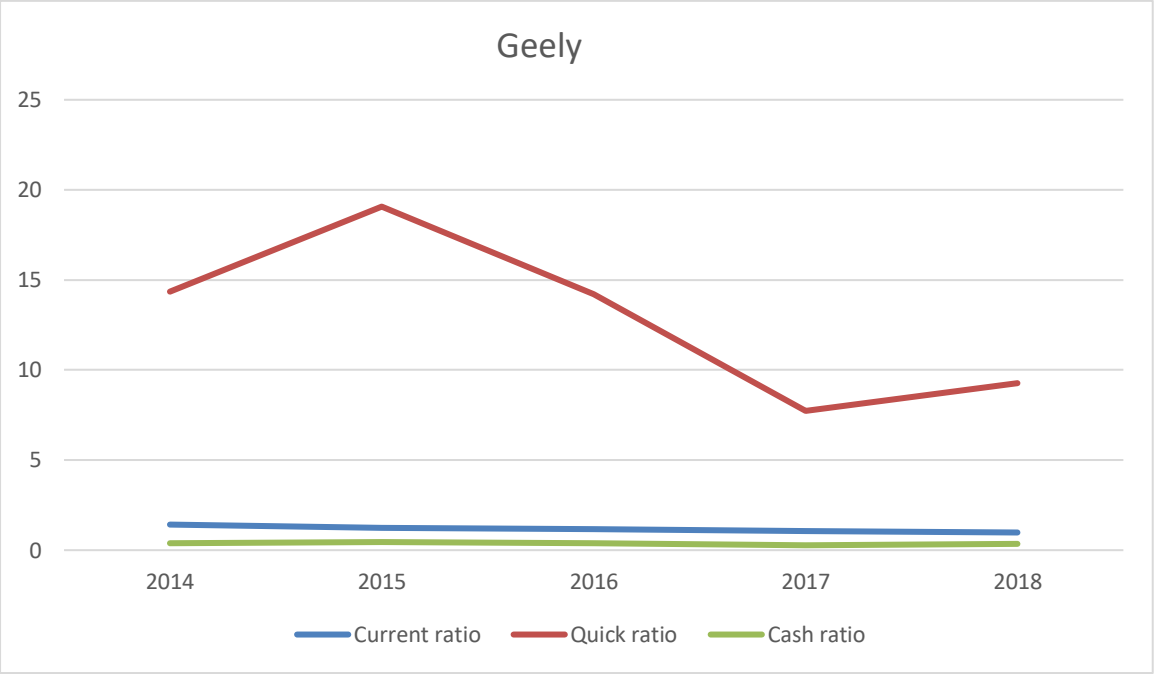


Chart 4.5 Tata's current ratio, quick ratio and cash ratio

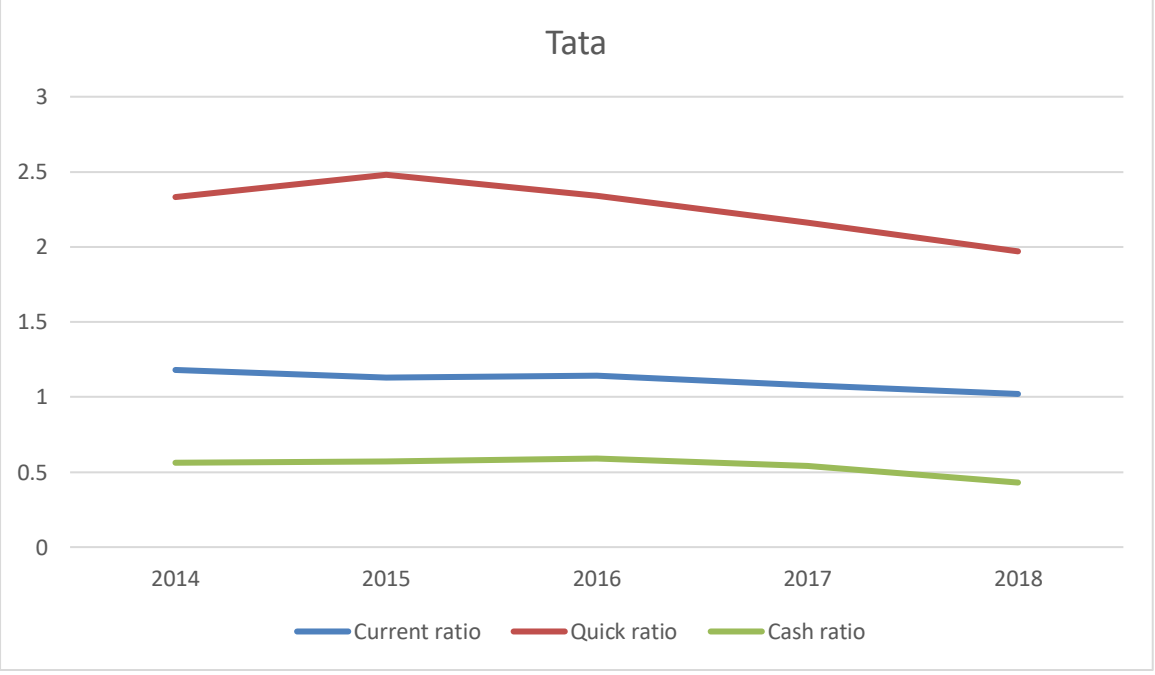
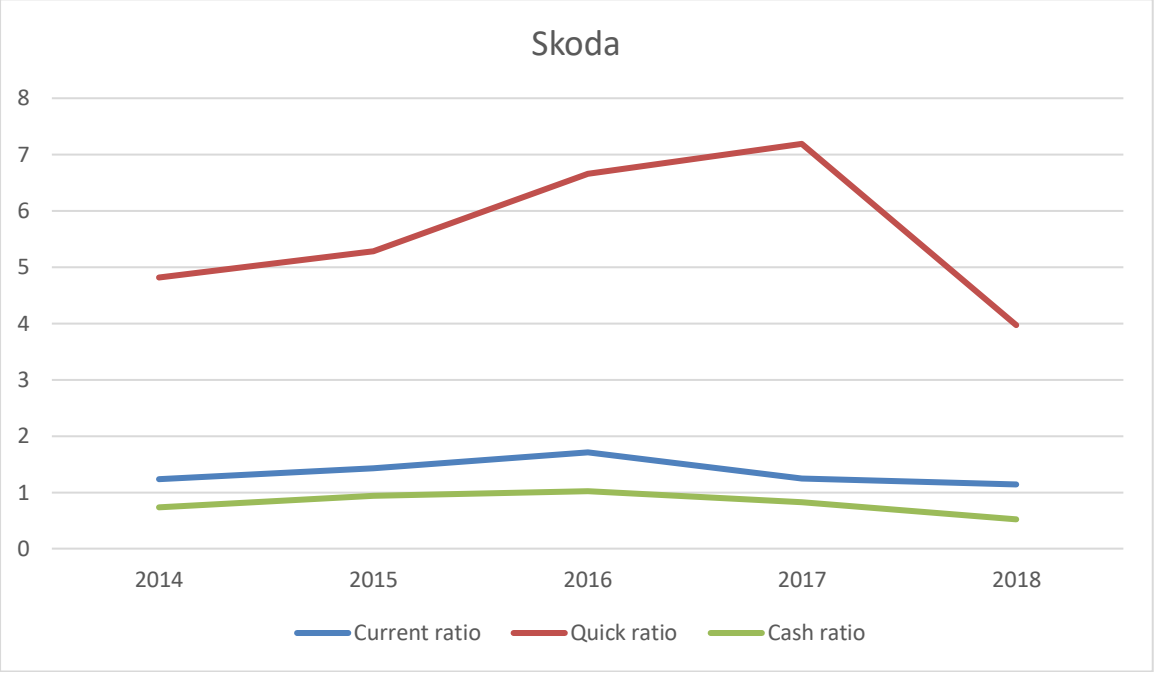


Chart 4.6 Skoda's current ratio, quick ratio and cash ratio



From table 4.4-4.6 and chart 4.4-4.6, we can find out chosen companies' current ratios are rising from 2014 to 2016 and decreased from 2017 to 2018, it means these companies' ability to pay off short-term liabilities with current assets is decreasing. Chosen companies' cash ratios are increasing from 2014 to 2017, it shows all chosen companies develop well in this period, but in 2018, chosen companies' quick ratios decreased a lot, so 2018 has many objective reasons making companies can't pay the liabilities in short term. Comparing 3 companies, the Tata' s ratios numerical value is lowest, it shows Tata developed in a stable situation. As for Geely, it has high ratios numerical value, that because Geely is still a fresh company in autocar industry, so Geely has enough money to turnover.

4.1.3 Solvency ratios

In this part, the formula (2.16), (2.17), (2.18), used to calculate asset-liability ratio, asset-liability ratio, long-term asset-liability ratio and financial leverage.

Table 4.7 Geely's debt ratio, debt-to-equity ratio and financial leverage

Geely	2014	2015	2016	2017	2018
Total debts	19,813,800	22,552,937	42,896,587	50,169,918	46,086,262
Total assets	37,280,150	42,292,460	67,582,836	84,980,752	91,460,980
Equity	17,466,350	19,739,523	24,686,249	34,810,834	45,374,718
EBIT	1,943,305	2,874,805	6,203,943	12,773,961	14,958,973
Interest paid	30,976	90,804	224,910	14,680	92,418
financial leverage	2.13	2.14	2.74	2.44	2.02
Debt ratio	0.53	0.53	0.63	0.59	0.50
Debt-to-equity ratio	1.13	1.14	1.74	1.44	1.02
Interest coverage	62.74	31.66	27.58	870.16	161.86

Table 4.8 Tata's debt ratio, debt-to-equity ratio and financial leverage

Tata	2014	2015	2016	2017	2018
Total debts	9,725	12,523	12,953	17,769	16,792
Total assets	15,589	18,563	20,567	24,350	26,780
Equity	5,864	6,040	7,614	6,581	9,988
EBIT	2,469	2,546	1,509	1,643	1,569
Interest paid	32	48	38	33	33
financial leverage	2.66	3.07	2.70	3.70	2.68
Debt ratio	0.62	0.67	0.63	0.73	0.63
Debt-to-equity ratio	1.66	2.07	1.70	2.70	1.68
Interest coverage	77.16	53.04	39.71	49.79	47.55

Table 4.9 Skoda's debt ratio, debt-to-equity ratio and financial leverage

Skoda	2014	2015	2016	2017	2018
Total debts	76,868	85,133	90,600	133,375	107,644
Total assets	176,869	202,615	228,180	250,859	219,318
Equity	100,001	117,482	137,580	117,484	111,674
EBIT	21,598	35,154	30,892	40,531	33,840
Interest paid	249	916	43	1,406	1,291
financial leverage	1.77	1.72	1.66	2.14	1.96
Debt ratio	0.43	0.42	0.40	0.53	0.49
Debt-to-equity ratio	0.77	0.72	0.66	1.14	0.96
Interest coverage	86.74	38.38	718.42	28.83	26.21

Chart 4.7 Geely's debt ratio, debt-to-equity ratio and financial leverage

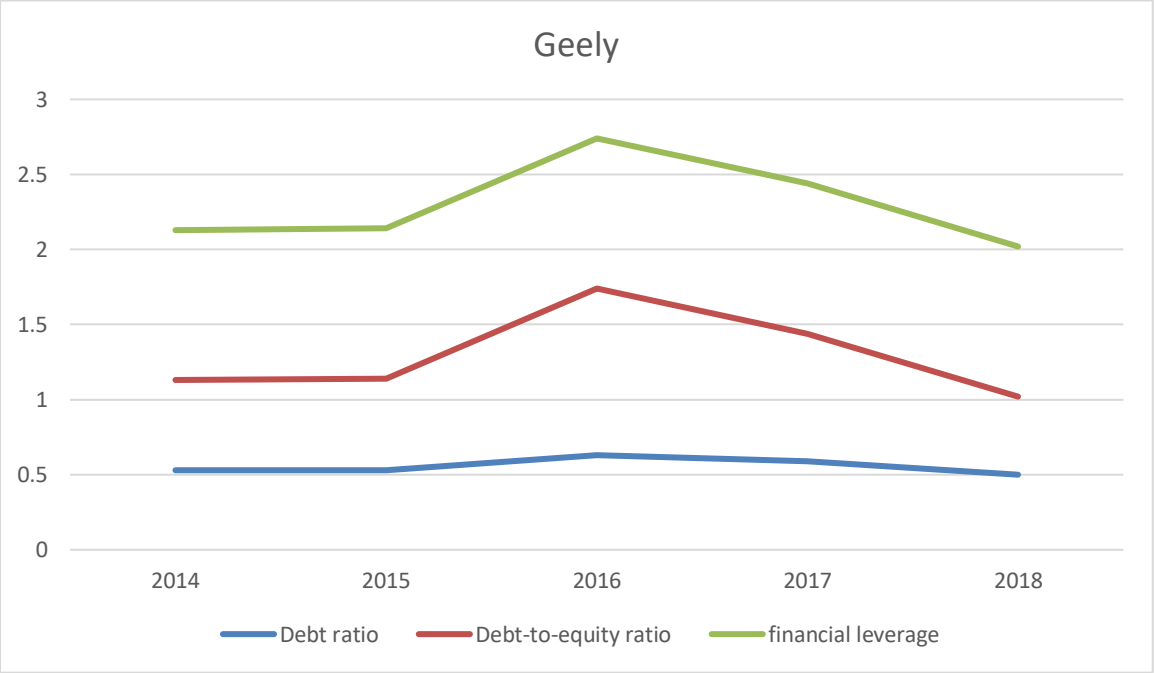


Chart 4.8 Tatas debt ratio, debt-to-equity ratio and financial leverage

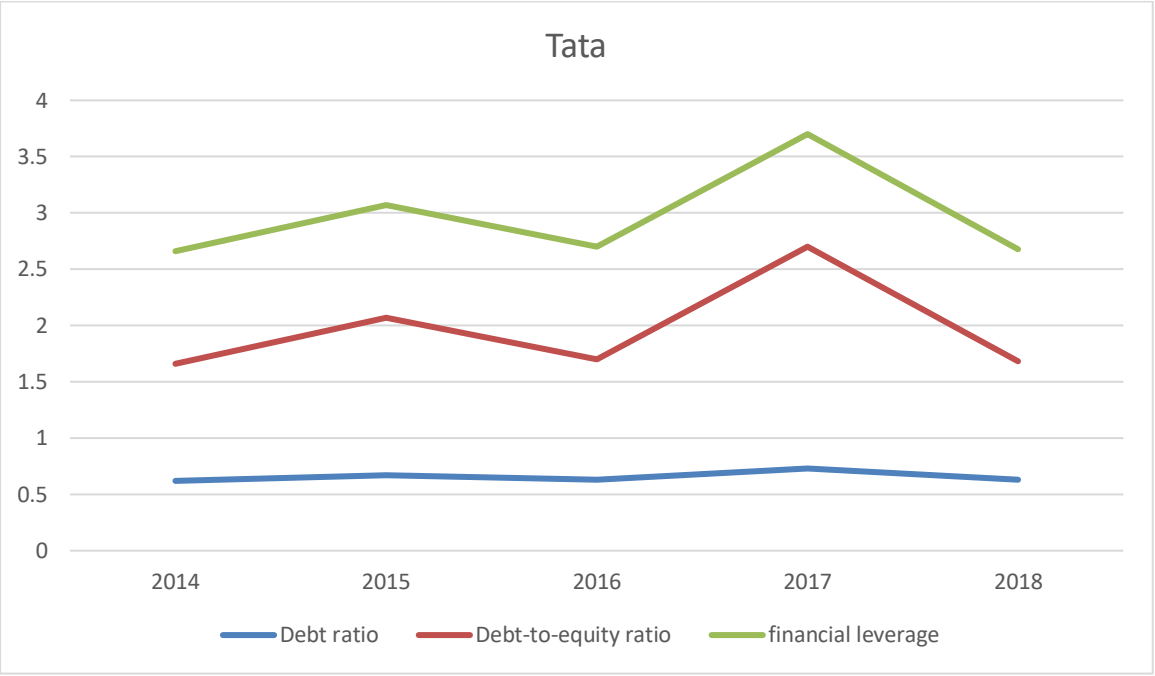
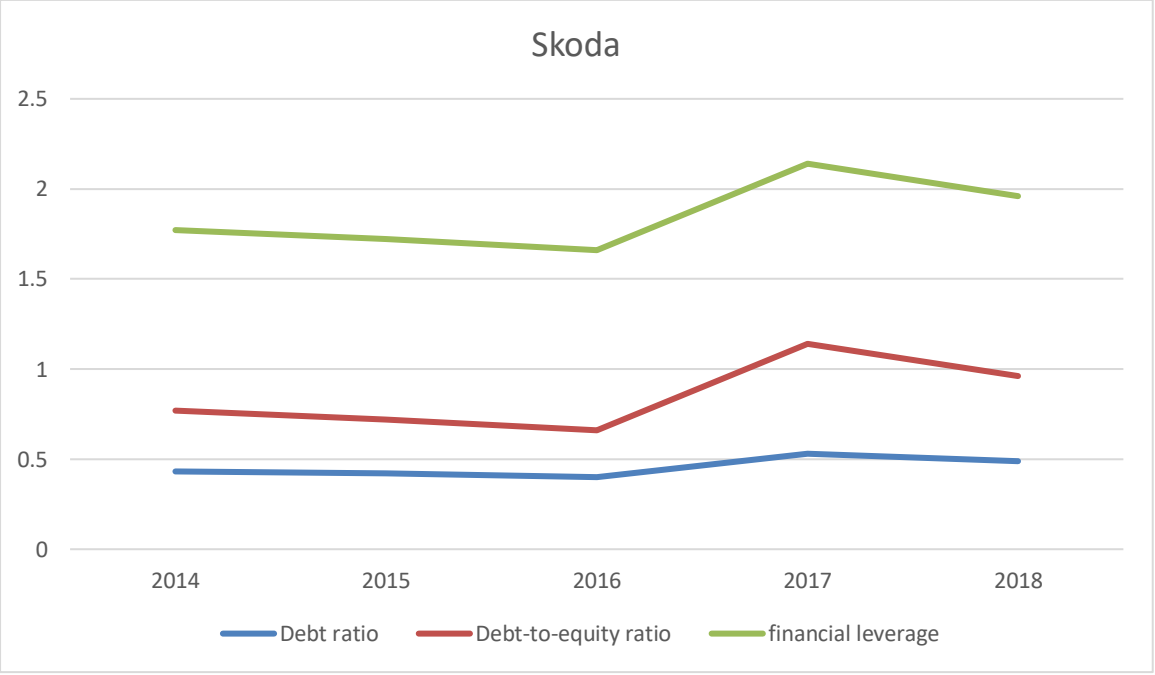


Chart 4.9 Skoda's debt ratio, debt-to-equity ratio and financial leverage



Debt ratio means the relative amount of a company's assets that are provided from debt. In

these chosen companies, Tata has higher debt ratio than other two companies, it means Tata needs much money to develop and it is in the high-speed devolving level. As for Skoda, it already is a large company and it has the supporting from Volkswagen company, so Skoda doesn't need to worry about the lack of money to develop and it has already reached high-level in the autocar market. In 2017, the interest coverage of Geely is 870.16 and Skoda's in 2016 is 718.42, that shows in this two year, this two companies had good profit and earned money.

4.1.4 Activity ratios

In this section, the formula (2.19), (2.20), (2.21), (2.22) , It is used to calculate the accounts receivable turnover rate, inventory turnover rate, unsettled days sales of accounts receivable and total asset turnover rate.

Table 4.10 Geely's receivables turnovers and days sales outstanding in accounts receivables

Geely	2014	2015	2016	2017	2018
Accounts receivable	16,451,660	14,917,756	29,094,826	33,518,423	22,884,366
Revenues	21,738,358	30,138,256	53,721,576	92,760,718	106,595,133
Total assets	37,280,150	42,292,460	67,582,836	84,980,752	91,460,980
Inventory	1,648,263	1,263,170	3,108,682	6,075,122	4,163,918
average collection period (ACP)	272.45	178.19	194.97	130.08	77.29
accounts receivable turnover (ART)	1.32	2.02	1.85	2.77	4.66
inventory turnover (IT)	1.23	2.06	1.17	0.86	1.57
total assets turnover (TAT)	0.58	0.71	0.79	1.09	1.17

Table 4.11 Tata's receivables turnovers and days sales outstanding in accounts receivables

Tata	2014	2015	2016	2017	2018
Accounts receivable	1,597	1,731	1,630	2,011	2,752
Revenues	19,386	21,866	22,286	24,339	25,786
Total assets	15,589	18,563	20,567	24,350	26,780
Inventory	2,174	2,416	2,685	3,464	3,767
average collection period (ACP)	29.66	28.50	26.33	29.74	38.42
accounts receivable turnover (ART)	0.08	0.08	0.07	0.08	0.11
inventory turnover (IT)	0.26	0.28	0.33	0.31	0.31
total assets turnover (TAT)	1.24	1.18	1.08	1.00	0.96

Table 4.12 Skoda's receivables turnovers and days sales outstanding in accounts receivables

Skoda	2014	2015	2016	2017	2018
Accounts receivable	16,526	17,566	33,993	29,369	34,390
Revenues	299,318	314,897	347,987	407,400	416,695
Total assets	176,869	202,615	228,180	250,859	219,318
Inventory	12,326	15,115	16,093	17,614	20,211
average collection period (ACP)	19.88	20.08	35.17	25.95	29.71
accounts receivable turnover (ART)	0.06	0.06	0.10	0.07	0.08

inventory turnover (IT)	0.85	0.85	0.85	0.85	0.86
total assets turnover (TAT)	1.69	1.55	1.53	1.62	1.90

Chart 4.10 Geely's receivables turnovers and days sales outstanding in accounts receivables

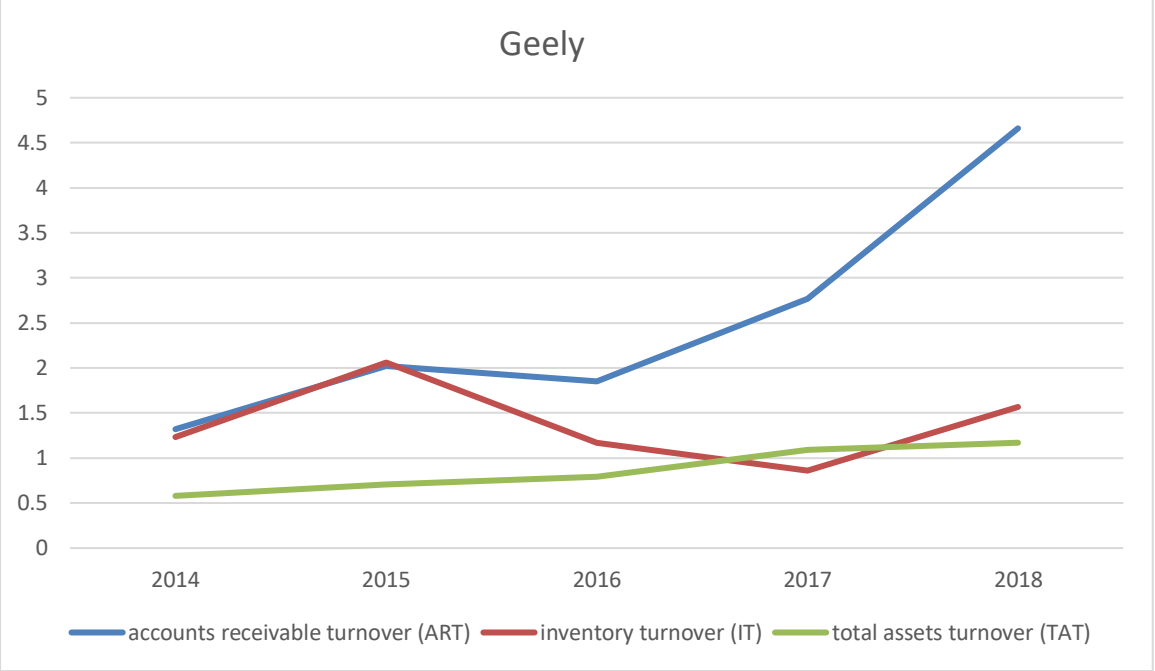


Chart 4.11 Tata's receivables turnovers and days sales outstanding in accounts receivables

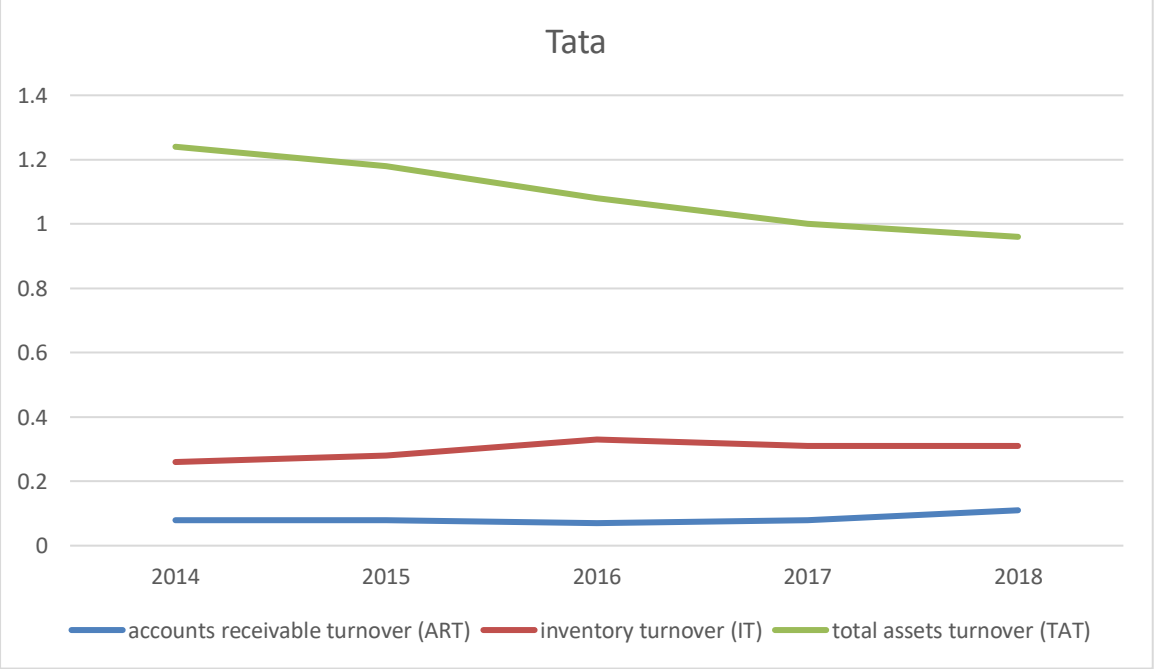
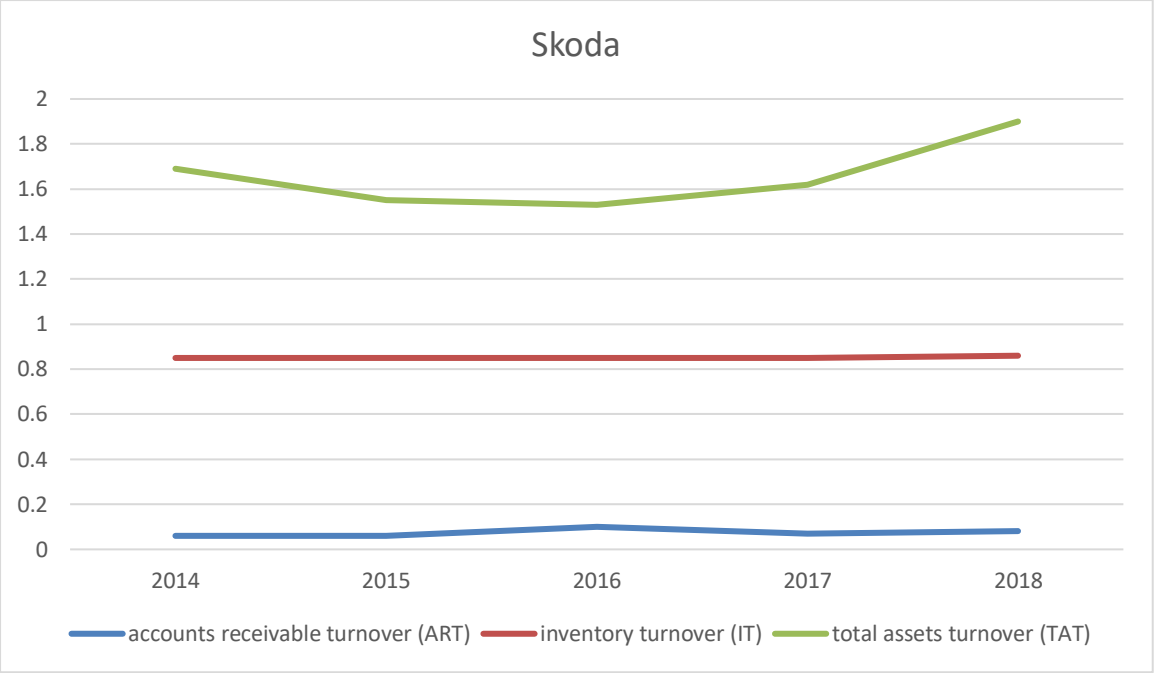


Chart 4.12 Skoda's receivables turnovers and days sales outstanding in accounts receivables



From table 4.10-4.12 and chart 4.10-4.12, It is easy to find out only Tata's assets turnover is decreasing every year, it means Tata can't make more money using their assets, but Geely and Skoda have more ability to create more sales from their assets. Inventory turnover rate is used to measure the number of times a company sells and replaces inventory within a certain period of time, the Geely's is highest in chosen companies, so Geely has much sales that's why Geely's assets turnover is increasing every year. Also, Geely's accounts receivable turnover is 100 times higher than Tata and Skoda, it shows Geely can easily to get back money from sales, which is difficult for Tata and Skoda.

4.2 Pyramidal decompositions

Pyramid decomposition is based on DuPont analysis. Quantify the influencing factors and analyze the increment of comprehensive indicators We use formula (2.16), (2.17), (2.18), (2.19), (2.20) to calculate the following data.

Table 4.13 Geely's Pyramidal decomposition

	2014	2015	2016	2017	2018
ROE	**0.08**	**0.11**	**0.20**	**0.31**	**0.28**
EAT/REV	**0.07**	**0.07**	**0.09**	**0.12**	**0.12**
EAT/EBT	**0.74**	**0.79**	**0.83**	**0.84**	**0.85**
TAX/EBT	**0.26**	**0.21**	**0.17**	**0.16**	**0.15**
EBT/EBIT	**0.98**	**0.97**	**0.96**	**1.00**	**0.99**
EBIT/REV	**0.09**	**0.10**	**0.12**	**0.14**	**0.14**
TC/REV	0.91	0.90	0.88	0.86	0.86
Cadm/REV*360	0.09	0.09	0.07	0.06	0.06
Csal/REV*360	0.82	0.82	0.82	0.81	0.80
REV/A	**0.58**	**0.71**	**0.79**	**1.09**	**1.17**
A/REV*360	617.38	505.18	452.89	329.81	308.89
FA/REV*360	198.35	202.40	136.26	124.08	164.39
CA/REV*360	419.03	302.78	316.63	205.72	144.50
A/E	**2.13**	**2.14**	**2.74**	**2.44**	**2.02**
L/A	0.53	0.53	0.63	0.59	0.50
D/A	0.05	0.05	0.03	0.00	0.03
CL/A	0.48	0.48	0.60	0.59	0.48

Table 4.14 Tata's Pyramidal decomposition

	2014	2015	2016	2017	2018
ROE	**0.31**	**0.32**	**0.16**	**0.19**	**0.11**
EAT/REV	**0.09**	**0.09**	**0.06**	**0.05**	**0.04**
EAT/EBT	**0.74**	**0.77**	**0.83**	**0.79**	**0.74**
TAX/EBT	**0.26**	**0.23**	**0.17**	**0.21**	**0.26**
EBT/EBIT	**0.99**	**0.98**	**0.97**	**0.98**	**0.98**
EBIT/REV	**0.13**	**0.12**	**0.07**	**0.07**	**0.06**
TC/REV	314.15	318.08	335.62	335.70	338.10
Cadm/REV*360	93.09	101.01	119.08	112.78	110.14
Csal/REV*360	221.06	217.08	216.54	222.92	227.96
REV/A	**1.24**	**1.18**	**1.08**	**1.00**	**0.96**
A/REV*360	289.49	305.62	332.23	360.16	373.88
FA/REV*360	155.23	167.16	187.30	198.02	217.93
CA/REV*360	134.26	138.46	144.93	162.14	155.95
A/E	**2.66**	**3.07**	**2.70**	**3.70**	**2.68**
L/A	0.62	0.67	0.63	0.73	0.63

D/A	0.23	0.27	0.25	0.31	0.22
CL/A	0.39	0.40	0.38	0.41	0.41

Table 4.15 Skoda's Pyramidal decomposition

	2014	2015	2016	2017	2018
ROE	**0.18**	**0.26**	**0.18**	**0.27**	**0.24**
EAT/REV	**0.06**	**0.10**	**0.07**	**0.08**	**0.06**
EAT/EBT	**0.86**	**0.90**	**0.82**	**0.81**	**0.81**
TAX/EBT	**0.14**	**0.10**	**0.18**	**0.19**	**0.19**
EBT/EBIT	**0.99**	**0.97**	**1.00**	**0.97**	**0.96**
EBIT/REV	**0.07**	**0.11**	**0.09**	**0.10**	**0.08**
TC/REV	334.02	319.81	328.04	324.18	330.76
Cadm/REV*360	27.39	13.21	22.62	17.10	20.25
Csal/REV*360	306.63	306.60	305.42	307.09	310.52
REV/A	**1.69**	**1.55**	**1.53**	**1.62**	**1.90**
A/REV*360	212.73	231.64	236.06	221.67	189.48
FA/REV*360	126.45	123.07	108.46	94.26	102.70
CA/REV*360	86.27	108.56	127.60	127.41	86.78
A/E	**1.77**	**1.72**	**1.66**	**2.14**	**1.96**
L/A	0.43	0.42	0.40	0.53	0.49
D/A	0.10	0.09	0.08	0.07	0.09
CL/A	0.33	0.33	0.32	0.46	0.40

ROE is decomposed into net profit margin, total assets turnover, financial leverage, and then we insert the data of each year and calculate basic ratio.

According to formula (2.22),

$$\mathrm{ROE} = \mathrm{a1} \cdot \mathrm{a2} \cdot \mathrm{a3} \tag{4.1}$$

The gradual change method

According to formula (2.28), the influence of sub-indicators can be calculated like:

$$\Delta x_{a_i} = \Delta a_1 + \Delta a_{2,0} + \Delta a_{3,0} \cdot \frac{\Delta y_x}{\Delta x} \tag{4.2}$$

$$\Delta x_{a_i} = \Delta a_{1,1} + \Delta a_2 + \Delta a_{3,0} \cdot \frac{\Delta y_x}{\Delta x} \tag{4.3}$$

$$\Delta x_{a_i} = \Delta a_{1,1} + \Delta a_{2,1} + \Delta a_3 \cdot \frac{\Delta y_x}{\Delta x} \tag{4.4}$$

Table 4.16 Geely's pyramidal decomposition of each factor

Geely	2014/2015	2015/2016	2016/2017	2017/2018

ROE	3.0150%	8.8982%	10.7645%	-3.0680%
TAX/EBT	0.5242%	0.5309%	0.3179%	0.2236%
EBT/EBIT	-0.1374%	-0.0562%	0.7412%	-0.1562%
Cadm/REV*360	0.6433%	2.2413%	2.114%	-1.1993%
Csal/REV*360	-0.0732%	0.2045%	1.9448%	1.7878%
FA/REV*360	-0.0729%	2.0526%	0.9286%	-4.1042%
CA/REV*360	2.0887%	-0.4297%	8.4575%	6.2343%
D/A	-0.0730%	-0.6956%	-2.5615%	1.5080%
CL/A	0.1152%	5.0505%	-1.1784%	-7.3619%

Table 4.17 Tata's pyramidal decomposition of each factor

Tata	2014/2015	2015/2016	2016/2017	2017/2018
ROE	0.8696%	-15.7193%	3.2265%	-7.9848%
TAX/EBT	1.0243%	2.6482%	-0.8382%	-1.2827%
EBT/EBIT	-0.1909%	-0.2224%	0.0798%	-0.0174%
Cadm/REV*360	-5.4865%	-14.7704%	3.967%	1.9608%
Csal/REV*360	2.7603%	0.4389%	-4.0139%	-3.7389%
FA/REV*360	-1.1344%	-1.2075%	-0.4554%	-0.8653%
CA/REV*360	-0.3993%	-0.3878%	-0.7309%	0.2692%
D/A	3.5998%	-1.2871%	3.5442%	-4.0090%
CL/A	0.6963%	-0.9312%	1.6735%	-0.3014%

Table 4.18 Skoda's pyramidal decomposition of each factor

Skoda	2014/2015	2015/2016	2016/2017	2017/2018
ROE	7.8096%	-7.9407%	8.8127%	-3.5428%
TAX/EBT	0.7942%	-2.4588%	-0.0416%	-0.1834%
EBT/EBIT	-0.2824%	0.6020%	-0.6085%	-0.0965%
Cadm/REV*360	10.3340%	5.7027%	-3.046%	2.3568%
Csal/REV*360	0.0245%	-0.7110%	0.9175%	2.5707%
FA/REV*360	0.4275%	1.2001%	1.2658%	-0.9746%
CA/REV*360	-2.8187%	-1.5631%	0.0171%	4.6948%
D/A	-0.4912%	-0.4005%	-0.6297%	1.1332%
CL/A	-0.1783%	-0.3287%	6.6808%	-3.1887%

Chart 4.13 Geely's pyramidal decomposition of each factor

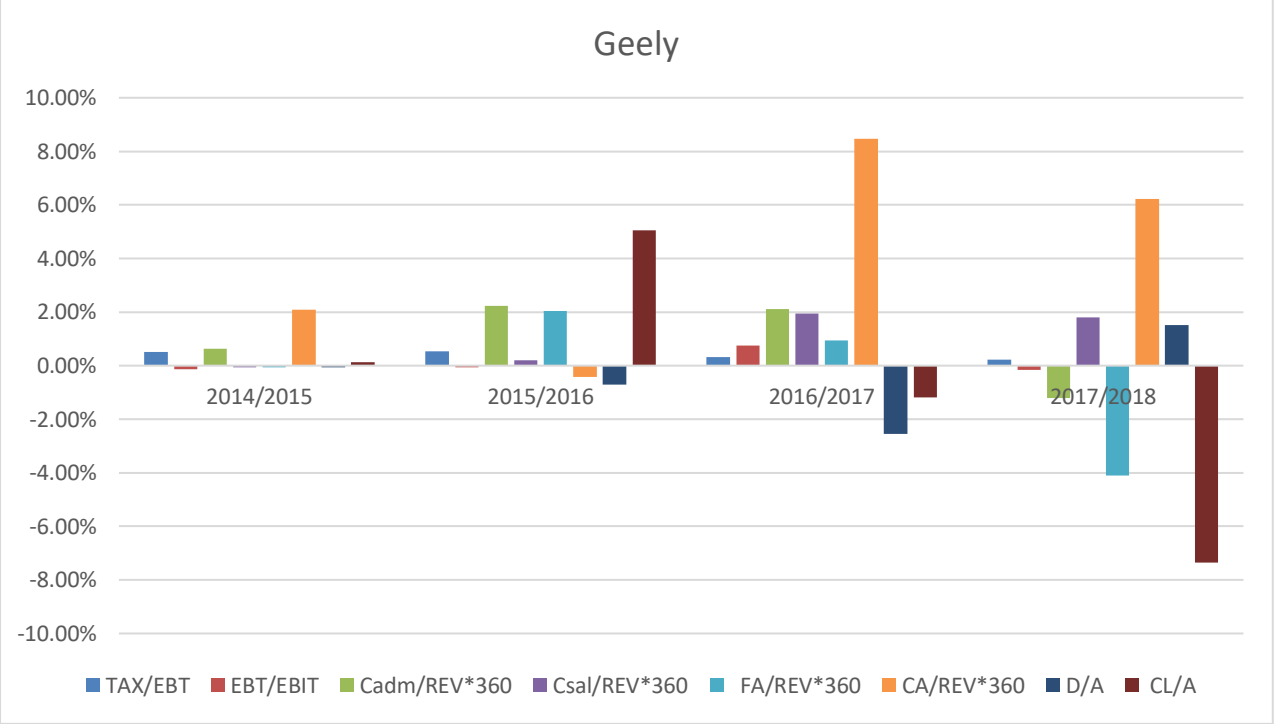


Chart 4.14 Tata's pyramidal decomposition of each factor

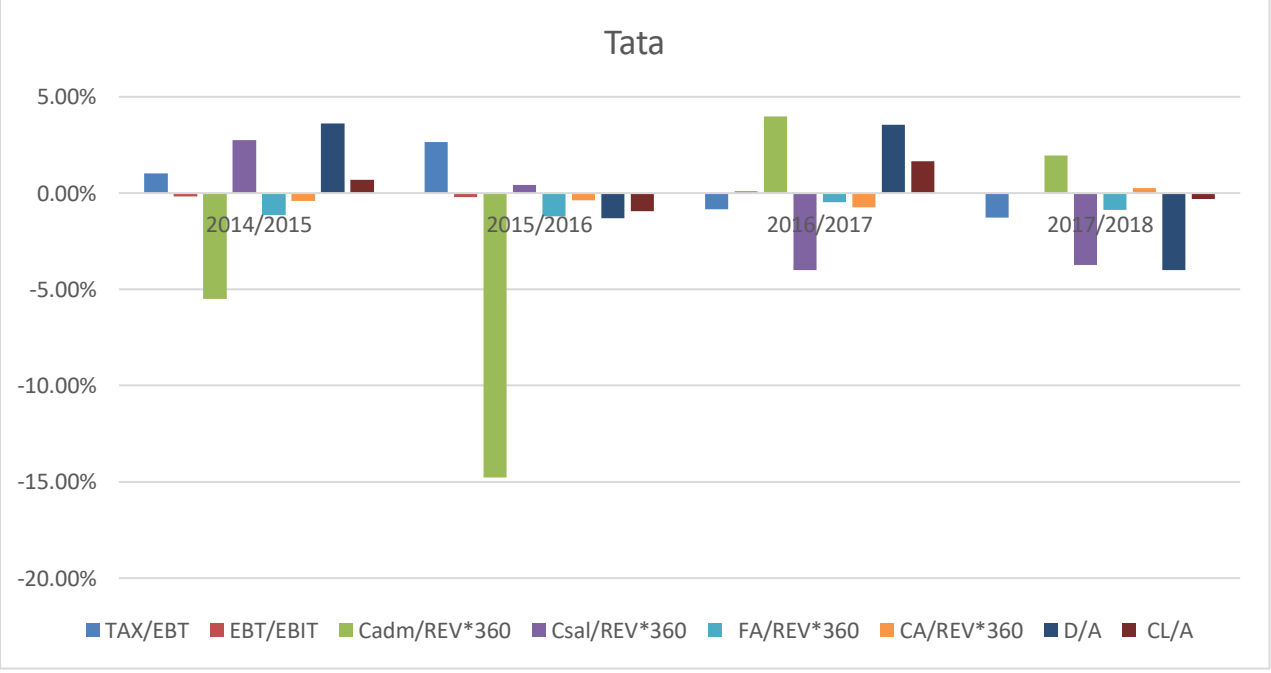
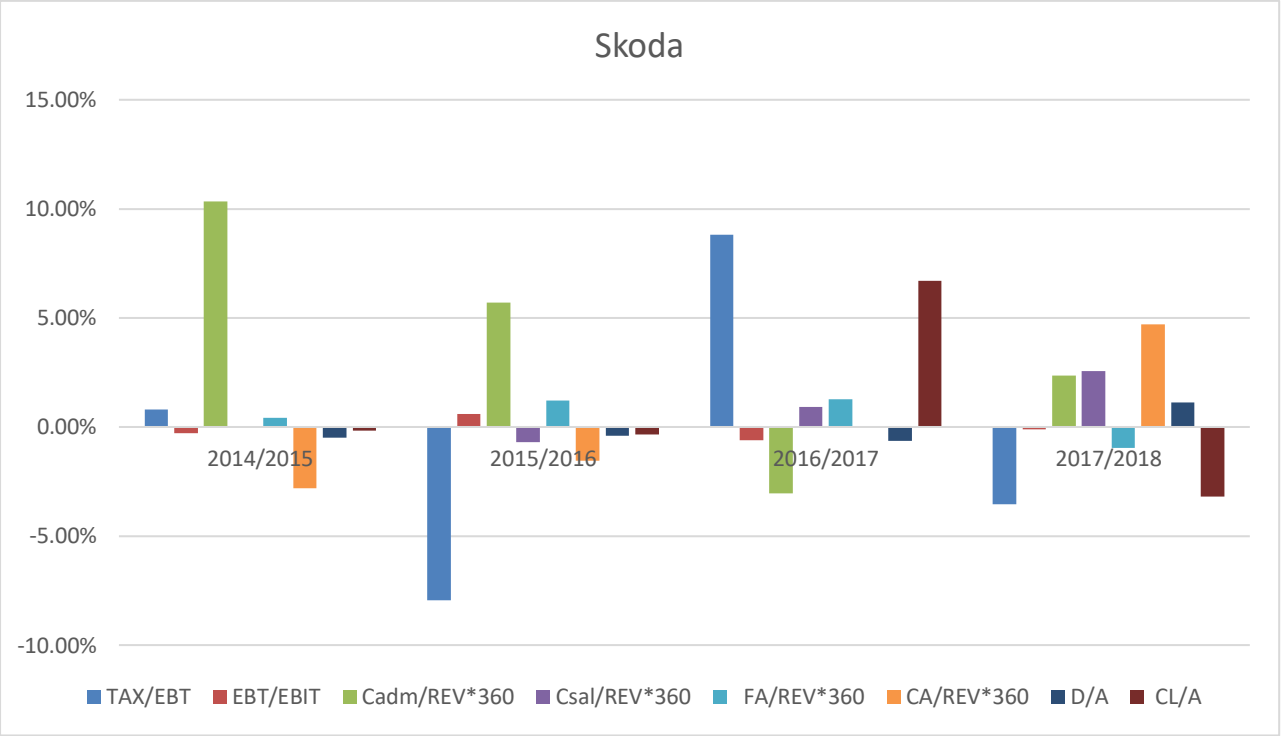


Chart 4.15 Skoda's pyramidal decomposition of each factor



(Geely part) From 2015 to 2018 and 2014, the impact of Ca / rev is the largest part of the infected population. In 2017, China's income growth slowed, and its pre-tax profit margin increased. Compared with last year. From 2016 to 2017, these factors are in the middle. Obviously, we can see the effect of Cl / a rise from -0.32% to -3.18%. Revenues have grown steadily; this company is doing well in sales. From 2017 to 2018, D / a dropped significantly. At the same time, CADM / rev, FA / rev, EBT / EBIT all have a negative impact on the return on net assets, and the return on net assets dropped significantly-3.068%. The cost of sales is still high, and as Geely 's operating capacity declines, net profit declines.

(Tata part) From 2014 to 2015, the Camd/REV changed from -5.48% to -14.77%, but from 2016 to 2018, the numerical value has been positive. Also, Csal/REV is decreasing each year

from 2.76% to -3.73%, that shows Tata company face the problem these years, as for EBT/EBIT is stable these years.

(Tata part) From 2014 to 2015, the Camd/REV changed from -5.48% to -14.77%, but from 2016 to 2018, the numerical value has been positive. Also, Csal/REV is decreasing each year from 2.76% to -3.73%, that shows Tata company face the problem these years, as for EBT/EBIT is stable these years.

(Skoda part) Skoda's TAX/EBT is negative from 2015 to 2018, Cadm/REV is decreasing much from 2014 to 2017, it means Skoda is optimizing the structure to decrease the cost of sales. It focus on how to make its system more mature, Skoda has high demand of sales .

Comparison of Geely Tata and Skoda

Table 4.19 Geely/Tata's comparison of chosen companies

Geely/Tata	2014	2015	2016	2017	2018
ROE	22.83%	20.69%	-3.93%	-11.47%	-16.39%
TAX/EBT	0.03%	-0.28%	0.15%	-1.84%	-3.56%
EBT/EBIT	0.02%	0.14%	0.23%	-0.55%	-0.36%
Cadm/REV*360	1.03%	0.77%	-3.00%	-4.88%	-4.40%
Csal/REV*360	2.44%	1.65%	-5.44%	-9.61%	-9.08%
FA/REV*360	1.74%	1.55%	-1.84%	-2.86%	-1.48%
CA/REV*360	11.46%	7.22%	-5.44%	1.69%	-0.32%
D/A	11.73%	15.22%	9.41%	14.70%	4.43%
CL/A	-5.63%	-5.58%	-9.62%	-8.13%	-1.62%

Table 4.20 Geely/Skoda's comparison of chosen companies

Geely/Skoda	2014	2015	2016	2017	2018
ROE	10.30%	15.10%	-1.74%	-3.69%	-4.17%
TAX/EBT	1.33%	1.56%	-0.28%	-0.97%	-1.25%
EBT/EBIT	0.04%	0.07%	0.71%	-1.00%	-0.85%
Cadm/REV*360	-0.15%	0.09%	-0.33%	-0.42%	-0.66%
Csal/REV*360	-1.68%	2.09%	-4.41%	-7.58%	-10.14%
FA/REV*360	2.59%	5.12%	1.85%	2.80%	4.83%
CA/REV*360	11.98%	12.53%	-4.41%	7.36%	4.52%
D/A	2.02%	2.46%	2.37%	4.21%	3.03%
CL/A	-5.82%	-8.81%	-14.27%	-8.09%	-3.65%

Table 4.21 Tata/Skoda's comparison of chosen companies

Tata/Skoda	2014	2015	2016	2017	2018
ROE	-12.53%	-5.59%	2.19%	7.77%	12.22%
TAX/EBT	4.91%	5.40%	-0.34%	0.58%	1.09%
EBT/EBIT	0.05%	-0.27%	0.38%	-0.30%	-0.22%
Cadm/REV*360	51.46%	77.39%	63.89%	77.22%	50.12%
Csal/REV*360	-67.02%	-78.91%	-58.87%	-67.93%	-46.03%
FA/REV*360	2.75%	6.74%	7.07%	13.53%	9.91%
CA/REV*360	4.59%	4.57%	-58.87%	4.53%	5.95%
D/A	-6.18%	-14.46%	-8.21%	-24.87%	-8.21%
CL/A	-3.08%	-6.05%	-3.29%	5.01%	-0.40%

From table 4.19-4.21 we can see the main influencing factor in Geely and Tata is CL/A, their CL/A are always negative from 2014 to 2018, As for D/A is the lowest influencing factor in Geely and Tata. In Geely and Skoda,the Cadm and Csal are all negative except 2015 and decreased from -168%to -10.14%.

It’s easy to find out in Tata and Skoda,the Csal/REV is the most influencing facotr about ROE,and Cadm has the few influence to the ROE,and the numercial vaule is much higher than other factors,manily over ±50%

5 Conclusion

From our analysis, we can find chosen companies have totally different situation in autocar market. Chosen companies are facing different main problem, it's easily to know the main reason is that chosen companies face different market and the time when they found. For Geely and Tata, this two companies takeover Volvo and Jaguar Land Rover which helped them occupy more sales in market for improving themselves brand. As for Skoda, it mainly focusses on itself brand, but it is a big company with the help of Volkswagen company. In generally, this chosen companies all produce cheap and economic useful car for civil. Through the analysis in Chapter 4, we can find that Skoda has done a good job from 2016 to 2018: income and net profit are increasing gradually, return on equity and return on equity are OK; current ratio and quick ratio perform well, which shows Skoda's ability to convert assets into cash and cash equivalents is good; Solvency ratio refers to that the debt of an enterprise, especially the long-term debt, is under control within a certain range and shows a linear contraction; the activity ratios also show the good operating ability to sell inventory into the market. As for Geely, we can see it works well every year, its ROE is rising each year, the reason is that Geely is a new brand in autocar industry, so Geely has potential force to develop.

But at the same time, we may notice that Tata experienced a difficult period from 2014 to 2018. Tata was not hit by the surrounding environment but was defeated by himself. Except for the current ratio and the receivables turnover ratio, almost all financial ratios are declining. Inventory is too high, orders are reduced.

In my opinion, although this chosen companies are little same in autocar market, but they have different problem need to be solved. For Geely, it should focus on how to decrease cost of produce and sale. For Tata, it should create more sales and open up more market, as for Skoda, it has already been in mature level in autocar industry, so Skoda should optimize the structure, because Skoda's factory is in the Europe ,it has high labor cost, so it should decrease labors by

optimizing the itself structure.

All chosen companies are more and more occupying a larger market in the automotive industry, I believe they will produce more amazing product and make more success.

Bibliography

BOOK

[1] DLUHOSOVA DANA, CULIK MIROSLAV, GURNY PETR, *Financial Management and Decision-Making of a Company* 2014. ISBN: 978-80-248-3619-5.

[2] DLUHOSOVA, DANA, TICHY, Tomas and ZMESKAL, Zdenek. *Financial Models.* 1st ed. VSB-Technical University of Ostrava, 2004. 254p. ISBN: 80-24807548

[3] CLAYMAN, MICHELLE, FRIDSON, MARTIN AND THROGHTON, GEORGE. *Corporate Finance: a practical approach*. 2nd ed. John Wiley, 2013.505p. ISBN:978-1118105370.

[4] GEORGE T. FRIEDLOB, LYDIA L. F. SCHLEIFER *Essentials of Financial Analysis*, 2003, ISBN: 978-0471432647

[5] THOMAS R. LTTELSON, *Financial Statements: A Step-by-step Guide to Understanding and Creating Financial Reports,* 2009, ISBN: 978-1601630230

[6] DAMODARAN, Aswath, *Applied Corporate Finance*, 3rd ed, New York: Wiley, 2010. ISBN:978-0470384640.

[7] DLUHOSOVA, Dana et al. *Financial Management and Decision-making of a Company. Analysis，Investing, Valuation, Sensitivity, Risk, Flexibility*. SAEl, vol. 28. Ostrava: VSB-TU Ostrava, 2014.ISBN：978-80-248-3619-5

[8] PETERSON DRAKE, Pamela and Frank, J. FABOZZL. *Analysis of Financial Statements*. New York, wley, 2012.ISBN978-1118299982

Electronic references

[9] Geely: Financial documents [online]. Available on http://global.geely.com/tag/annual-report/

[10] Tata: Financial documents [online]. Available on https://www.tatamotors.com/investors/annual-reports/

[11] Skoda: Financial history [online]. Available on

https://www.skoda-storyboard.com/en/annual-reports/

List of Abbreviations

Return on assets ROE:

Return on equity TL:

Total liabilities TA:

Total assets

LTD: Long-term debt

TR: Total revenue.

DSI: Days sales outstanding.

EBIT: Earnings before interest and taxes

EAT: Earnings after taxes

EBT: Earnings before taxes

S: Sales

A: Assets

Declaration of Utilisation of Results from the Bachelor Thesis

Herewith I declare that

- I was acquainted with the fact that my bachelor thesis is fully covered by Act No. 121/2000 Coll. - Copyright Act, in particular § 35 - use of the work in the framework of civil and religious ceremonies, in school performances and use of school work and § 60 - school work;
- I acknowledge that by submitting my bachelor thesis, I agree to the publication of my work under Act No. 111/1998 Coll. on universities and on amendments to other acts (the Higher Education Act), as amended, regardless of the outcome of the defence;
- I acknowledge that the VSB – Technical University of Ostrava (hereinafter VSB-TUO) has a non-profit right to use the bachelor thesis for its own internal needs (Section 35 (3));
- I agree that the thesis (bachelor's thesis) will be archived in electronic form in the Central Library of VSB-TUO. I agree that bibliographic data on the thesis will be published in the VSB-TUO information system;
- it was agreed that I would conclude a license agreement with VSB-TUO, if it was interested in it, with the right to use the work within the scope of Section 12 (4) of the Copyright Act;
- it was agreed that I can use my work, bachelor's thesis, or grant a license for its use only with the consent of VSB-TUO, which is entitled to request a reasonable contribution from me because of costs incurred by VSB-TUO for the creation of the work (up to their actual amount).

Ostrava dated 1 May 2020

MINH XUAN DINH

Student's name and surname

List of Annexes

Annex1 Balance sheet of Chosen companies from 2014-2018

Annex2 Cash flow of Chosen Companies from 2014-2018

Annex3 Financial ratios of Chosen Companies from 2014-2018

Annexes

Annex1 Balance sheet of Geely Tata and Skoda from 2014-2018

Balance sheet of Geely's from 2014 to 2018(In 1,000 RMB)

	2014	2015	2016	2017	2018
Current assets	25,303,099	25,347,852	47,249,001	53,008,183	42,785,480
cash	7,203,176	9,166,926	15,045,493	13,414,638	15,737,196
accounts and notes receivable	16,451,660	14,917,756	29,094,826	33,518,423	22,884,366
inventories	1,648,263	1,263,170	3,108,682	6,075,122	4,163,918
Long-term assets	11,977,051	16,944,608	20,333,835	31,972,569	48,675,500
tangible assets	5,860,705	8,034,427	10,650,313	14,052,943	23,422,617
intangible assets	4,208,230	5,260,241	6,461,809	10,551,773	14,993,188
financial assets	1,908,116	3,649,940	3,221,713	7,367,853	10,259,695
Total assets	37,280,150	42,292,460	67,582,836	84,980,752	91,460,980
Current liabilities	17,844,927	20,449,254	40,630,199	49,901,947	43,760,401
Long-term liabilities	1,968,873	2,103,683	2,266,388	267,971	2,325,861
Total liabilities	19,813,800	22,552,937	42,896,587	50,169,918	46,086,262
Shareholders' equity	17,466,350	19,739,523	24,686,249	34,810,834	45,374,718
Total liabilities and Shareholders' equity	37,280,150	42,292,460	67,582,836	84,980,752	91,460,980

Balance sheet of Tata's from 2014 to 2018(In £m)

	2014	2015	2016	2017	2018
Current assets	7,230	8,410	8,972	10,962	11,170
cash	3,459	4,263	4,657	5,487	4,651
accounts and notes receivable	1,597	1,731	1,630	2,011	2,752
inventories	2,174	2,416	2,685	3,464	3,767
Long-term assets	8,359	10,153	11,595	13,388	15,610
tangible assets	3,184	4,474	5,175	5,885	7,417
intangible assets	4,240	4,952	5,497	6,167	6,763
financial assets	935	727	923	1,336	1,430

Total assets	15,589	18,563	20,567	24,350	26,780
Current liabilities	6,134	7,457	7,875	10,104	10,920
Long-term liabilities	3,591	5,066	5,078	7,665	5,872
Total liabilities	9,725	12,523	12,953	17,769	16,792
Shareholders' equity	5,864	6,040	7,614	6,581	9,988
Total liabilities and Shareholders' equity	15,589	18,563	20,567	24,350	26,780

Balance sheet of Skoda's from 2014 to 2018(In CZK million)

	2014	2015	2016	2017	2018
Current assets	71,730	94,961	123,342	144,184	100,447
cash	42,878	62,280	73,256	97,201	45,846
accounts and notes receivable	16,526	17,566	33,993	29,369	34,390
inventories	12,326	15,115	16,093	17,614	20,211
Long-term assets	105,139	107,654	104,838	106,675	118,871
tangible assets	65,916	65,642	64,509	66,060	72,767
intangible assets	25,168	24,813	21,483	23,497	30,589
financial assets	14,055	17,199	18,846	17,118	15,515
Total assets	176,869	202,615	228,180	250,859	219,318
Current liabilities	58,461	66,192	72,166	116,623	88,058
Long-term liabilities	18,407	18,941	18,434	16,752	19,586
Total liabilities	76,868	85,133	90,600	133,375	107,644
Shareholders' equity	100,001	117,482	137,580	117,484	111,674
Total liabilities and Shareholders' equity	176,869	202,615	228,180	250,859	219,318

Annex 2 Cash flow of Geely Tata and Skoda from 2014-2018

cash flow of Geely's from 2014 to 2018(In 1,000 RMB)

	2014	2015	2016	2017	2018
Revenues	21,738,358	30,138,256	53,721,576	92,760,718	106,595,133
Operating expenses	2,019,330	2,595,848	3,637,774	5,207,420	6,554,433
Cost of goods sold	17,775,723	24,667,603	43,879,859	74,779,337	85,081,727
EBIT	1,943,305	2,874,805	6,203,943	12,773,961	14,958,973
Interest	30,976	90,804	224,910	14,680	92,418
EBT	1,912,329	2,784,001	5,979,033	12,759,281	14,866,555
Taxation	494,177	586,143	1,033,755	2,038,572	2,284,575
EAT	1,418,152	2,197,858	4,945,278	10,720,709	12,581,980
Dividend received	0.1625	0.2568	0.58	1.19	1.4

cash flow of Tata's from 2014 to 2018((In £m)

	2014	2015	2016	2017	2018
Revenues	19,386	21,866	22,286	24,339	25,786
Operating expenses	5,013	6,135	7,372	7,625	7,889
Cost of goods sold	11,904	13,185	13,405	15,071	16,328
EBIT	2,469	2,546	1,509	1,643	1,569
Interest	32	48	38	33	33
EBT	2,437	2,498	1,471	1,610	1,536
Taxation	622	576	245	338	403
EAT	1,815	1,922	1,226	1,272	1,133
Dividend received	1.03	14.57	0.68	7.15	3.05

cash flow of Skoda's from 2014 to 2018(In CZK million)

	2014	2015	2016	2017	2018
Revenues	299,318	314,897	347,987	407,400	416,695
Operating expenses	22,776	11,559	21,863	19,350	23,434
Cost of goods sold	254,944	268,184	295,232	347,519	359,421
EBIT	21,598	35,154	30,892	40,531	33,840
Interest	249	916	43	1,406	1,291
EBT	21,349	34,238	30,849	39,125	32,549
Taxation	2,928	3,422	5,686	7,284	6,239
EAT	18,421	30,816	25,163	31,841	26,310

Annex 3 Financial ratios of Geely Tata and Skoda from 2014-2018

Geely	2014	2015	2016	2017	2018
profitability ratios					
operating profit margin	8.94%	9.54%	11.55%	13.77%	14.03%
net profit margin	6.52%	7.29%	9.21%	11.56%	11.80%
return on assets (ROA)	6.79%	18.52%	13.45%	16.18%	18.09%
return on equity (ROE)	8.12%	11.13%	20.03%	30.80%	27.73%
liquidity ratios					
current ratio	1.42	1.24	1.16	1.06	0.98
quick ratio	14.35	19.07	14.20	7.73	9.28
cash ratio	0.40	0.45	0.37	0.27	0.36
solvency ratios					
debt-to-assets ratio	53.15%	53.33%	63.47%	59.04%	50.39%
debt-to-equity ratio	1.13	1.14	1.74	1.44	1.02
financial leverage	2.13	2.14	2.74	2.44	2.02
activity ratios					
receivables turnovers	1.32	2.02	1.85	2.77	4.66
inventory turnover	1.23	2.06	1.17	0.86	1.57
Total assets turnover	0.58	0.71	0.79	1.09	1.17

Tata	2014	2015	2016	2017	2018
profitability ratios					
operating profit margin	12.74%	11.64%	6.77%	6.75%	6.08%
net profit margin	9.36%	8.79%	5.50%	5.23%	4.39%
return on assets (ROA)	16.04%	14.08%	7.57%	6.61%	5.74%
return on equity (ROE)	30.95%	31.82%	16.10%	19.33%	11.34%
liquidity ratios					
current ratio	1.18	1.13	1.14	1.08	1.02
quick ratio	2.33	2.48	2.34	2.16	1.97
cash ratio	0.56	0.57	0.59	0.54	0.43
solvency ratios					
debt-to-assets ratio	62.38%	67.46%	62.98%	72.97%	62.70%
debt-to-equity ratio	1.66	2.07	1.70	2.70	1.68
financial leverage	2.66	3.07	2.70	3.70	2.68
activity ratios					
receivables turnovers	0.08	0.08	0.07	0.08	0.11
inventory turnover	0.26	0.28	0.33	0.31	0.31
Total assets turnover	1.24	1.18	1.08	1.00	0.96

Skoda	2014	2015	2016	2017	2018
profitability ratios					
operating profit margin	4.53%	-1.35%	2.77%	-1.64%	0.00%
net profit margin	6.15%	9.79%	7.23%	7.82%	6.31%
return on assets (ROA)	12.21%	17.35%	13.54%	16.16%	18.48%
return on equity (ROE)	18.42%	26.23%	18.29%	27.10%	23.56%
liquidity ratios					
current ratio	1.23	1.43	1.71	1.24	1.14
quick ratio	4.82	5.28	6.66	7.19	3.97
cash ratio	0.73	0.94	1.02	0.83	0.52
solvency ratios					
debt-to-assets ratio	43.46%	42.02%	39.71%	53.17%	49.08%
debt-to-equity ratio	0.77	0.72	0.66	1.14	0.96
financial leverage	1.77	1.72	1.66	2.14	1.96
activity ratios					
receivables turnovers	0.06	0.06	0.10	0.07	0.08
inventory turnover	0.85	0.85	0.85	0.85	0.86
Total assets turnover	1.69	1.55	1.53	1.62	1.90